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THE NEUROLOGY OF CERVICAL RIBS*

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Supernumerary cervical ribs, as furnishing the cause of many obscure and some very serious nerve lesions affecting the arm, have not been sufficiently recognized in neurologic literature. It is almost startling that no textbook on nervous diseases makes the slightest detailed mention of cervical ribs in connection with brachial plexus disorders, excepting the English translation of Oppenheim. Even the great handbook of Levandowsky has only a slight reference to cervical ribs, and Chipault's "Surgery of the Nervous System" is devoid of any mention of the subject. Works on surgery and radiography have much more.

The frequency of cervical ribs is much greater than is usually understood. Fischel in Prague, in four years, found cervical ribs in 1 per cent. of all the bodies examined. Their most common location is in conjunction with the seventh cervical vertebra, next in relation to the sixth and seventh, and then to the fifth and fourth in descending order of frequency. They have never been observed attached to the first, second or third.

Historically, the cervical rib has been well represented for more than 150 years. Its first description was by Hunalt in 1740, and it was again fully described by Gruber in 1869. In 1894, Pilling collected seventy-six instances. Its first recognition during life was apparently by Cooper in 1818, and it was first surgically extirpated in 1861 by Coote. Since we have had the use of the roentgen ray it has often been unexpectedly found, and not infrequently the roentgen ray adds proof positive to the clinical diagnosis of cervical ribs, which in a general way can be rather definitely diagnosed from the nervous and vascular symptoms they sometimes produce. The very best paper on the subject of cervical ribs is that of Streissler,[1] who considers the subject from every point of view, giving 297 references and 200 cases.

Somewhat strangely in view of the fact that the female organism is supposed to be more stable and less subject to variation than that of the male, 63 per cent. of the cases of cervical ribs are found in women according to Walther, while Streissler found 70 per cent. female and 30 per cent. male.

Of course cervical ribs are congenital; but clinical manifestations rarely develop under the age of 10, commonly make their appearance between 10 and 30, and occasionally give rise to symptoms which first appear only in the later decades of life.

The supernumerary ribs are bilateral in a little more than half the cases, and when lacking in symmetry or represented only on one side, have a disposition to appear more frequently on the left. Occasionally they show hereditary tendencies or constitute a family marking. Thus, Russell[2] found them in sisters, Drehmann[3] in a family presenting eighteen cases, and I have seen them in a mother and daughter.

The disturbance occasioned by cervical ribs does not bear any definite relation to the size of the rib, some of the largest occasioning no symptoms at all, and some comparatively small ones being attended by very disabling and even destructive processes affecting the upper extremity.

Gruber is disposed to classify cervical ribs, according to their size, into four groups:

1. Consisting only of a node which does not extend beyond the lateral dimensions of the transverse processes of the vertebra.
2. A blunt finger of bone 4 or 5 cm. in length.
3. A rib which extends far enough forward to articulate with the first rib or even to be attached to the sternum by a ligamentous cord.
4. A complete rib having vertebral origin and costosternal cartilage.

These ribs are commonly associated with other skeletal abnormalities, especially those marking the sternum, the vertebrae and the ribs. The articulation of the cervical rib to the vertebra either is in the form of a full synostosis, or in some cases the union is partially osteal. Modifications of the scalene muscles are occasioned by the projection of this adventitious bony development, but the subclavian artery always curves above the rib or the fibrous cord, which extends from the tip of the rib forward to the sternum and which in certain cases causes as much difficulty and as much damage as a thoroughly developed bone.

The thorax is changed in its conformation to some extent, having higher apexes with salient arteries readily palpable above the level of the clavicle; sometimes visible pulsation can be made out in the triangles of the neck. This unusual extent of the pulmonic tissues and the feeling of bony hardness or osteal intumescence is a frequent source of mistaken diagnosis.

ETIOLOGY

The disturbances arising from the presence of cervical ribs, which commonly appear only after the end of

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Streissler, E.: Die Halsrippen, Ergebn. d. Chir. u. Orth. 8:280, 1913.

2. Russell, C. K.: M. Rec. 71:253.

3. Drehmann, G.: Cervicodorsal Scoliosis and Supernumerary Ribs with and without Supernumerary Cervical Rudimentary Remnants, Ztschr. f. orthop. Chir. 16:12; Heredity and Family Groups, Ten Cases, Allg. med. Centr. Ztg., 1905, No. 2, p. 21.

the first decade of life, seem to be brought about by the naturally increasing rigidity of the bony and cartilaginous structures, reduction of elasticity of arteries and nerves, and the increased weight thrown on the upper extremities in the various activities of life. Occasionally the disorder in the arm is induced by traumatism, such as bruises or pressure occurring from carrying heavy weights on the shoulder or in the hands. Frank[4] reports a case in which a yoke used for carrying milk pails brought about disturbance in the arms in the case of a milkmaid who had cervical ribs, and Streissler has seen a case in which carrying a gun on the shoulder led to the development of disorder in the hand. In one of my cases, symptoms followed long continued efforts at cranking a gas engine, and in another, unusual lifting of heavy objects preceded the onset of symptoms.

Tuberculosis affecting the pulmonary apex has of course been found in frequent association with cervical ribs, and in some instances the contiguous inflammation seems to have disturbed the brachial nerve trunks in their passage over this adventitious structure. So pleurisy, exudation, and occasionally the loss of fat,

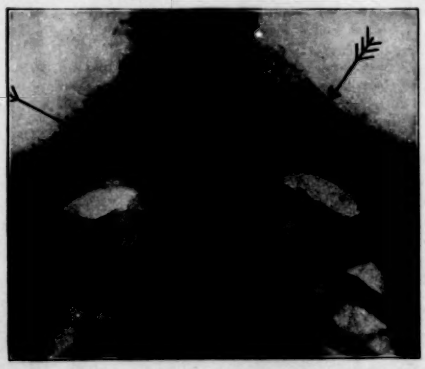

Fig. 1.—Very large right cervical rib, smaller left cervical rib, indicated by arrows. Cervical scoliosis with compensatory curves. Not attended by any vascular or nervous symptoms.

thereby laying the parts subject to more intimate injury, have led to the development of these peculiar disorders. The fracture of the clavicle and the development of callus, encroaching on the space between the shoulder girdle and the thorax, have been the initial features in some cases. Periostitis of the supernumerary rib has occurred, and occasionally it is the seat of tumor growth. Nerves which are exposed to the disadvantage of passing over an additional rib, under general systemic toxic conditions, such as those associated with diphtheria and arthritis, have shown an additional vulnerability; and disorder in their peripheral distribution has subsequently followed. So, too, arteriosclerosis of the subclavian, which is in close apposition to the brachial roots above the supernumerary rib, can seriously affect these nerve structures as well as cause vascular faults in the hand.

SYMPTOMATOLOGY

As already indicated, the symptomatology of disorder of the nerves and vessels due to cervical rib is not relative to the size of the accessory structure. These symptoms consist first of local signs. In some instances a tumor-like mass can be made out at the side of the neck, behind the clavicle, at the apex of the thorax; but the outline of the supernumerary rib cannot probably be ever determined by palpation. A more than usually salient subclavian artery and general widening of the root of the neck and a lofty lung apex are objective in character and capable of detection by the usual means of observation. The roentgen ray furnishes a very definite method of detecting these cervical ribs, but a certain amount of experience is essential in interpreting the plates. Cervical ribs of the first order laid down by Gruber are so clearly parallel with the transverse process that unless the negative is particularly definite and scrutinized with great care, a cervical rib of dimensions which do not carry it beyond the tip of the transverse process may be entirely overlooked. I know of a prominent surgeon who from the roentgenogram determined the presence of a cervical rib which on operation was not found; and subsequent roentgenographic examinations failed to show anything like the artefarct which was present in the original negative and which was certainly misleading. Again, when the supernumerary ribs are well developed and tolerably symmetrical, they may be mistaken easily for the first thoracic pair, and it is only by counting the cervical vertebrae and by lateral views that their exact nature can be determined. A rudimentary first dorsal rib has been mistaken for a cervical rib.

VASCULAR CHANGES

While vascular changes are not so common as nerve disturbances, as a rule, in some cases they are very prominent. A change may be found in the character of the pulse as compared with the sound side, and certain positions given the upper extremity may serve to stop the pulse altogether, as, for instance, in the case of a soldier whose pulse failed always when he carried his gun on any part of his shoulder, and equally could be extinguished by raising his hand to the same position. Sometimes by placing the hand above the head or by drawing down on the extremity, as in carrying burdens in the hands, the pulse can be reduced in amplitude and even extinguished. In other cases the pulse will vary with respiration, tending to disappear on full inspiration. In rare cases, disturbances of the subclavian by the pressure of the rib has resulted in thrombosis and loss of all pulse in the extremity. In other cases, aneurysm has formed at the point where the subclavian passes over the rib. Several of these conditions are competent to produce an inequality of the radial beat in the two extremities.

The peripheral circulation in the extremity is very frequently disturbed, and some cases of miscalled Raynaud's disease have been due to cervical rib. The fingers often present a blue, edematous or reddened condition, and this may be accentuated by the involvement of the nerves and the trophic changes and glossy skin that attend a neuritis. Many patients complain that the hand on the affected side is much more influenced by cold; and that the hand is invariably colder than the opposite one. Intense edema, vasomotor flushing, and hyperhidrosis are common in the severe cases.

NERVOUS SYMPTOMS

Nervous symptoms are the most common features in cases of cervical rib that affect the upper extremity. The sensory defect may be confined to the distribution

4. Frank, O.: Symptoms Induced by Carrying Milk Yoke, Direct Violence, Deutsch. med. Wchnschr., 1907, No. 14, p. 597.

of a single nerve or may embrace the entire member; and pains of a neuralgic character may radiate to the back of the neck, the back of the shoulder, the neighborhood of the ear, very frequently down the side of the chest in the axillary line, and in some cases are complained of over the entire side of the body. The sensory disturbance is usually most intense in the fingers and most commonly in the ulnar portion of the hand and in the ulnar fingers, although in a fair proportion of the cases the radial distribution in the thumb and index is the seat of the greatest complaint. Paresthesias, hypersensitiveness and hyposensitiveness of all grades may be found in varying cases, and Barker[5] has from personal experience called very definite attention to dissociation of sensation in the affected member similar to that found in syringomyelia. On the motor side weakness is very common, and if the painful manifestations are pronounced, disuse of the arm leads to a still greater weakness. Very rarely is there complete paralysis. All varieties of claw hand may be encountered, with the corresponding contractures due to the involvement of the roots of the brachial plexus in varying degree or in its entirety. There are commonly functional difficulties in the use of the hand, which sometimes in a minor measure are present only in the finer manipulations, such as writing. These patients usually experience inconvenience and sometimes intense pain when carrying burdens in the hand or on the arm, and frequently adopt a sling that supports the weight of the member and relieves the drag on the injured nerves and vessels at the point of pressure.

TROPHIC DISTURBANCES

Disturbances of the trophic control in the small muscles of the hand and the forearm are very common, and usually the muscle group originating from the internal condyle is the one most involved in the forearm. With this may be found trophic disturbance of the skin, especially at the finger ends, trophic blebs,

Fig. 2.—Bilateral cervical ribs, right one of the first degree, left one of the second degree, according to Grubbe. (Courtesy of Dr. Hollis E. Potter.)

glossy skin, changes in the nails, and hemorrhages under the nails. Occasionally the sympathetic nerve has been involved, giving rise to pupillary disturbance, ptosis, and retraction or protrusion of the eye. The phrenic nerve may have been occasionally affected.

5. Barker, L. F.: A Case of Unilateral Circumscribed and Elective Sensory Paralysis, J. Exper. M. 1896; Deutsch. Ztschr. f. Nervenh. 9:342, 1896.

In quite a number of cases, hoarseness is reported. Whether or not the right recurrent nerve which loops under the subclavian at the point where the subclavian arches over the supernumerary rib is ever involved is a somewhat disputed point. Streissler thinks it doubtful. Planet[6] described a case in which there was hoarseness, and Dr. Carl Davis of Chicago has reported

Fig. 3.—Large asymmetrical cervical ribs, indicated by arrows. Neuritis and vascular disturbances in the right arm. Very slight cervical scoliosis.

two such cases. Weisenstein[7] reported a case in which a patient was aphonic every morning. This seems to have been hysterical rather than due to involvement of the recurrent. A similar case is reported by Ranzi.[8] Spiller and Gittings[9] noted one case in which there was atrophy of the tongue and larynx. I myself have had under observation an otherwise healthy woman who has a symmetrical pair of cervical ribs, and who presents at times paresthesia and numbness in the hands, particularly the right. She has had three very prolonged attacks of aphonia attended by paresis of the right vocal cord. At least two of these attacks have been brought on by overexertion in the way of lifting, and I think, after a faithful search for other causes, are undoubtedly due to involvement of the recurrent by the cervical rib.

CERVICAL SCOLIOSIS AND CERVICAL RIBS

Ever since Garrè[10] called definite attention to the presence of cervical ribs, usually asymmetrical or unilateral, in conjunction with cervical scoliosis, the frequency of these observations has been increasing. Streissler found such a scoliosis in 16 per cent. of his cases. Frequently the cervical deviation is attended by more or less asymmetry of the face and of the skull, and of course is attended by compensatory curves in the dorsal region. The deviation of the spine does not always seem to be proportionate to the size of the supernumerary rib; but sometimes a supernumerary wedge-shaped cervical vertebra is found to which the

6. Planet: Tumeurs osseuses du cou, la septième côte cervicale, Thèse de Paris, 1890.
7. Weisenstein: Zur klinischen Bedeutung der Halsrippe, Wien. klin. Rundschau, 1903.
8. Ranzi, E.: Zur Kasuistik der Halsrippen, Wien. klin. Wchnschr., 1902.
9. Spiller and Gittings: Muscular Atrophy of Cervicobulbar Type and Cervical Rib; Tongue and Larynx Muscle Atrophy; Shoulder Girdle and Upper Extremities Affected, New York M. J., Oct. 6, 1906.
10. Garrè: Four Cases of Cervicoscoliosis and Cervical Ribs, Ztschr. f. orthop. Chir. 9:73.

supernumerary rib is attached. Of course such a scoliosis is attended by some postural displacement of the shoulder and scapula. In every case of cervical scoliosis, supernumerary ribs should be suspected.

DIAGNOSIS

The diagnosis of cervical ribs sometimes is attended with a great deal of difficulty, and a large number of other conditions can easily be confused with them. Tumors in the angles of the neck or growing from the cervical and upper dorsal vertebrae may bring about similar conditions in the related extremity. Aneurysms of the subclavian produce a similar symptom group. Quite a number of cases of Raynaud's disease have been found not to be due to the vascular disorder of symmetrical gangrene, etc., but to have been caused by the vascular and neuritic changes secondary to cervical ribs. As the cervical rib produces a brachial neuritis, its presence has been overlooked in this rather common disorder, the neuritis being attributed to systemic or local conditions of a different order; and so neuralgias affecting the upper extremity have perhaps in many instances been of mistaken origin. Subacromial bursitis and arthritis of the shoulder joint producing painful disability of the upper extremity might easily be confused with the effects of a cervical rib. Several cases have been diagnosed as pachymeningitis cervicalis, others as poliomyelitis, others as progressive atrophy, and still others as syringomyelia Further, owing to the involvement of the thoracic branches of the cervical plexus, some of these cases have been confounded with intercostal neuralgias, and the cervical scoliosis has for some furnished an acceptable explanation of the changes in the hand, without recognition of its association with and dependence to a large degree on the presence of cervical ribs. Dulness and conformation peculiarities of the lung apex have led to a diagnosis of phthisis, and of course their association, in view of the prevalence of phthisis, is not unusual. If one, however, has in mind the frequency of cervical ribs and their capacity for producing painful vascular and trophic changes and symptoms in the upper extremity, careful search of the case with the aid of the roentgen ray will usually make the diagnosis quite definite.

Fig. 4.—Same patient as in Figure 3 after operation for the removal of the right supernumerary cervical rib.

COURSE AND PROGNOSIS

Many cases show long periods of symptoms or even of very decided disability, with intervals of camparative or complete freedom. Nevertheless, the course of the disorder in the arm is usually protracted and sometimes continues for many years. Nerves and vessels placed at the disadvantage caused by the peculiar anatomic variation presented by cervical ribs can be easily injured in ordinary life pursuits and may recover under conditions of rest and protection. The case histories of numerous severe instances indicate that the tendency is for the disease to come on insidiously, to advance steadily, and to reach such a degree that amputation of the hand or arm or other heroic surgical intervention is readily accepted. The very severe cases are practically hopelessly short of surgery, which has for its proper object the removal of the cervical rib.

TREATMENT

In the milder cases a conservative treatment is altogether advisable. Rest, avoidance of strain and weight carrying, and the thorough support of the arm by a properly arranged sling all tend to avoid irritation of the nerves and vessels by rib contact. Electricity, massage, applications of heat and cold, and general measures, such as are commonly indicated in a brachial neuritis, have their very definite place in the management of these cases, but in the severer ones give rise to so much pain and inconvenience as to be almost insupportable. In cases of the more pronounced grade, recourse to surgery is the only avenue to cure.

The extirpation of a cervical rib constitutes one of the most difficult of major surgical measures, and must not be lightly undertaken. Not only does it require a very definite anatomic dissection, but dissection in a very dangerous location that is rendered more dangerous by unusual anatomic relations. A number of surgical mishaps have occurred. Jones[11] of Manchester reports injuries to the arteries, to the pleura, and to the subclavian vein. In a number of instances the incomplete removal of the cervical rib has been followed by its regrowth from the proximal stump and the reappearance of all the former disabilities. It seems to be highly important that the periosteum should be completely removed. In other instances, sufficient attention has not been given to the cordlike extension which represents the anterior portion of the incomplete rib, and symptoms have consequently not been relieved. When complete extirpation can be effected, the prospect for full relief and restitution of function is practically perfectly good; but chronic neuritic, vascular and trophic processes, often attended by contractures, require months and sometimes years of time and treatment to recede entirely.

My own experience is based on eleven cases, all of which have been verified either by operation or roentgenoscopy or both, and all of which have been relieved with one exception. In this instance a very competent surgeon removed most of the cervical rib. I must reiterate the view of Miller,[12] who insists that in every case of protracted discomfort, pain, or trophic disturbance in the arm, a careful search should be made for cervical ribs. The same advice applies to every case of cervical scoliosis.

11. Jones, H. L.: Difficulty of Extirpation and Harm to Plexus; Recurrences by New Bone Formation from Stump, Quart. J. Med. 1: 187.

12. Miller, J. L.: Observations on the Symptomatology and Diagnosis of Cervical Rib, Am. J. M. Sc. 142: 811 (Dec.) 1911.

ENCEPHALITIS LETHARGICA*

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About the middle of 1917, there was reported by von Economo[1] a number of cases, appearing in Vienna, in apparently epidemic proportions, characterized by somnolence almost simulating sleeping sickness, and ending sometimes after a few weeks or even months in death. The prodromes were headache, nausea and vomiting, suggesting a general infection or intoxication. In addition to these general symptoms, the frequency of the simultaneous involvement of some of the cranial nerves, manifested by ophthalmoplegias, such as ptosis and facial palsy, suggested a localization of the disease in the brain. Examination of the spinal fluid threw very little light on the nature of the disease, the cells in most cases being within normal limits, and repeated bacteriologic examinations yielding no positive results. In addition to the involvement of isolated nuclei of the bulb, there were, in some other instances, other signs of cerebral involvement, such as ataxia and tremor, which suggested disturbance of cerebellar function. Von Economo considered food intoxication as an etiologic factor, but ruled it out by the complete absence of gastro-intestinal disturbances. He also felt that typhoid, influenza and Heine-Medin disease could be excluded, and concluded that he was dealing with a specific disease caused by a living virus resembling, but not identical with, the virus of poliomyelitis. He gave the disease the name "encephalitis lethargica."

Early the following year, March, 1918, Breinl[2] reported from Australia nine cases of a mysterious disease, the prevalence of which had already been reported from Queensland and New South Wales. His cases were mostly among children, and usually began suddenly with convulsions, high fever, headache and malaise. The patients soon passed into a state of coma lasting from two to three days. The majority of these patients died with hyperpyrexia and respiratory failure. The symptomatology varied exceedingly; the Babinski reflex and Kernig's sign were not constant; the knee jerks were exaggerated in some, and absent in others. Sometimes there was nystagmus, with tremors in the arms and legs. Intestinal disturbances were not uncommon. Spinal fluid obtained by lumbar puncture was negative except for a slight increase in cells. The only symptoms constantly present were the onset with convulsions and high temperature, which were followed by a state of deep unconsciousness; the clinical picture suggested to Breinl an intense irritation of the entire central nervous system. He felt that the spinal fluid findings differentiated the disease from meningitis, the presence of fever from lead poisoning, and the symptomatology from gastro-intestinal disturbances causing death in convulsions. He concluded that the most important disease from which to differentiate it was poliomyelitis, for he states that in the various reports of poliomyelitis epidemics, there are cases of cerebral or encephalitic type in which drowsiness, deepening into coma, is predominant.

The pathologic picture of Breinl's fatal cases showed lesions that were typical of poliomyelitis—perivascular cell infiltration involving the brain as well as the cord. The gray substance of brain and cord showed a diffuse infiltration with leukocytes and round cells, collected here and there into small foci, around which the gray matter appeared softened. In addition to this the ganglion cells showed changes characteristic of neurophagia. This observer was able to transmit the disease to monkeys by inoculating them with the spinal fluid taken from typical cases. He was further able to transmit the infection from monkey to monkey—the animals showing pathologically the same lesions as seen in the human case. The conclusion was therefore made that the disease was caused by the same virus as that causing poliomyelitis.

About the same time that these observations were being made in Australia, similar cases were under investigation in France and England, and later, reports from Italy and Uruguay[3] give evidence that the disease, whatever its nature, was world-wide in its distribution.

In France, where the term "lethargic encephalitis" has found general acceptance, the clinical aspects of the disease have been carefully considered. Netter[4] regards the disease as a "maladie autonome," the specific agent of which is endowed with an affinity for the nerve centers. He insists that the clinical picture is not that of food intoxication or of a special form of influenza or poliomyelitis. Sainton,[5] in summing up the situation in regard to the disease, is inclined to regard the malady as a result of localization in the brain of the prevailing influenza. According to this writer, lethargic encephalitis is not identical with poliomyelitis.

In England the disease has received a variety of names, indicating the divergent opinions concerning its identity. During the early days of the epidemic it was felt by many that food intoxication (botulism) was the cause of the manifestations, and such a hypothesis found support in the fact that canned foods, owing to war conditions, were being used extensively. Later the possibility that the disease was a form of poliomyelitis was suggested in numerous reports in the literature. The subject was eventually taken in hand by the government, and a complete investigation into the nature and cause of the disease was completed in 1918 by the Local Government Board on Public Health and Medical Subjects.[6] According to this report, the work of McIntosh seemed to eliminate botulism in discussion of this disease, for he was unable to show its identity culturally or serologically. Also evidence was brought forward against its similarity to poliomyelitis on clinical (MacNalty), epidemiologic (James), experimental (McIntosh) and pathologic (Marinesco) evidence.

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1. Von Economo, C.: Wien. klin. Wchnschr. **30**: 581, 1917, abstr. Rev. Neurol. & Psychiat. **16**: 188.
2. Breinl, A.: Clinical, Pathological and Experimental Observations on the "Mysterious Disease," a Clinically Aberrant Form of Poliomyelitis, Med. J. Australia **1**: 209 (March) 1918.
3. Morquio, L.: Lethargic Encephalitis Rev. méd. d. Uruguay **21**: 463, 1918.
4. Netter, A.: Lethargic Encephalitis, Paris méd. **8**: 81, 1918; Bull. de l'Acad. de méd. **79**: 337, 1918.
5. Sainton, P.: L'encéphalite léthargique, Presse méd. **26**: 487, 1918; Bull. et mém. Soc. méd. d. Hôp. de Paris **42**: 424, 1918.
6. Report of Local Government Board, N. S. 121, London, 1918.

Although the disease was thought by many to be a new one, it was not long before the fact became apparent that similar epidemics had been described before, usually associated with the pandemics of influenza. Von Economo, in his original communication, mentioned that similar epidemics had been reported as early as 1712, and similarly in 1891, following pandemics of influenza. Netter also recalls the one of 1891 in France, and mentions that similar cases followed the influenza epidemic of 1895.

Biermer,[7] in 1865, gives Camerarius credit for having described an epidemic which occurred in Tübingen in 1712. The victims were seized with violent brain symptoms, passing into a prolonged coma; because of the coma the disease received the name of "Schlafsucht."

The epidemic of lethargic encephalitis of 1891 originated in the north of Italy. Before much scientific attention was paid to it the lethargy received considerable comment in the lay press throughout Europe. For some unknown reason the disease received the appellation of "nona." The origin of this designation is very obscure, although it is perhaps due to a typographic error in an early newspaper account, and should really be "koma."[8] Whatever its origin or significance, the designation has remained, and the literature of the time is filled with case reports and other references to it. Letters to the *Lancet*[9] and to the *British Medical Journal*[10] by their correspondents in Rome during 1890 attributed the circulation of stories concerning the so-called disease to native superstition. On the continent, however, a definite clinical entity was recognized as the basis for the reports, although the exact nature of the disease was never definitely settled. It was considered to have a close relationship to influenza or "la grippe," mainly on account of the almost synchronous appearance of that infection in the districts affected. To support this view it was repeatedly recalled that during influenza epidemics, serious central nervous system involvements are not uncommon, often manifesting themselves in protean symptoms.

Fig. 1 (Case 6).—Cortical meninges, × 66: arachnoid trabeculae sparsely infiltrated with mononuclear cells and blood globules; pial vessels greatly engorged.

In this country, so far as we are aware, the first cases to which attention has been called are those which occurred on the medical service of Major Tasker Howard at Camp Lee, Va., the earliest in November, 1918, and later reported by Pothier.[11] Since then,[12] case reports have appeared from Illinois and from Iowa.

The following report is based on personal observation by one of us (P. W.) of five cases at Camp Lee, Petersburg, Va., together with postmortem material from four cases assigned to the other (J. B. A.) for examination by the Army Medical School and the Army Medical Museum.

The first four patients, seen by one of us (P. W.) are evidently convalescent:

Case 1.—Private A. F., aged 29, white, had had gastrointestinal disturbances since 1911, accompanied by vomiting or acute pain. Jan. 19, 1919, he complained of having double vision, which continued for several days. On admission, Jan. 21, the patient was apprehensive and nervous. His right pupil was larger than the left, and both reacted sluggishly to light and accommodation. The knee jerks on each side were hyperactive. He was thought to have hysteria.

February 7, it was noted that there was a slight weakness of the muscles of the face, in the neighborhood of the left eye and the left corner of the mouth, and when talking the patient spoke from the right side. At this time the spinal fluid contained only 12 cells, and both sugar and albumin were normal. Eleven days later there were 150 cells present (90 per cent. mononuclears), and the chemical content was normal. Other laboratory examinations were negative. The course of the disease was practically afebrile, and the patient was discharged, March 9.

This patient, at the time of my arrival at the base hospital, was free from all symptoms, but the following still showed clinical signs of the disease:

Case 2.—Private M. S., aged 28, white, January 20, felt dizzy and weak and had a fainting attack. He felt nauseated but did not vomit. On admission to the hospital five days later, he complained of a feeling of lightness in the head and still had some nausea. At that time the face was flushed, the throat was congested, and the pulse was accelerated. His temperature was 101. By January 30 (five days after admission), the temperature dropped to normal but showed thereafter an occasional rise, but never exceeded 99.2.

Two weeks later, February 16, the patient was unable to close his right eye, the right pupil was larger than the left, the pupillary reflexes were sluggish, and he was mentally dull. The knee jerks were both very much increased, the Babinski reflex was present, and Kernig's sign was suggestive. The gait was unsteady, and the patient complained of double vision and dizziness. The diplopia passed off in a day, but the paralysis of the facial muscles progressed during the same time so that the entire right side was eventually involved. This palsy gradually cleared up, and when I last saw the patient, March 10, he was practically normal. Examination of the spinal fluid, February 17 (the day when the facial paralysis was at its height), revealed 150 cells (all mononuclears) with normal protein and sugar. The Wassermann test and cultures of the blood and spinal fluid were negative.

Case 3.—Corporal J. C. K., aged 23, white, with both family and personal histories negative, began to feel dizzy, January 18, and complained of double vision, which persisted

7. Biermer, in Virchow: Specielle Pathologique und Therapie, 5, part 1, p. 620, 1865.
8. Ebstein, W. Einige Bemerkungen über die sogennante Nona, Berl. klin. Wchnschr. 41: 1005, 1891.
9. Lancet, 1: 869, 1890.
10. Brit. M. J. 1: 748, 1890.
11. Pothier, O. L.: Lethargic Encephalitis, J. A. M. A. 72: 715 (March 8) 1919
12. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. 72: 971 (April 5) 1919. Ely, F. A.: Lethargic Encephalitis, J. A. M. A. 72: 985 (April 5) 1919.

for two days. This was followed by insomnia, and the patient became nervous and irritable. Examination of the eyes, January 20, revealed vision and extra-ocular movements normal (diplopia had disappeared the day before), but there was some congestion of the retinal veins of the left disk. The dizziness and insomnia persisted, but there was no nausea nor vomiting, and the diplopia did not return.

February 4, the patient's general condition was good, but he still complained of nervousness and a trembling of the lower extremities. He stated also that he felt as if his jaw was going to fall off. The next day he suffered from extreme headache, occipital pains, and soreness over the entire spinal column. Both knee jerks continued to be hyperactive and there was bilateral ankle clonus.

The patient's temperature on admission, January 25, was 100, and it had fluctuated thereafter between 98 and 99.6 until February 20, after which it remained normal.

The spinal fluid, February 1, contained 50 cells and two days later 64. Both times protein and sugar tests were normal. Cultures and Wassermann reaction of the blood and spinal fluid were negative, and a white blood count, taken February 4, was 7,600.

CASE 4.—Private M. H., aged 31, white, had received in October, 1918, a shrapnel wound of the shoulder which was followed by bladder disturbances and partial paraplegia. At the time his present illness began he was doing well and was able to get about with the aid of a cane.

February 16, he began to feel weak, having at times alternate sensations of hot and cold. The following day he remained in bed, but on the 18th, since he had no fever, he was persuaded to sit up. On the 20th, however, his temperature rose to 103 and he had a violent headache, followed by double vision and vertigo, the diplopia lasting twenty-four hours. He complained of drowsiness, but could not sleep well. His throat was very sore. The patient was very apathetic and toxic looking, and the skin was flushed. He was intelligent and well oriented, but was retarded mentally. The extra-ocular movements and pupillary reflexes were normal. The left masseter muscle was definitely weak, but the pterygoids were apparently unaffected. There was slight weakness in the facial muscles around the left angle of the mouth. Otherwise examination of the cranial nerves revealed nothing abnormal. The pharynx was very much injected, and the tonsils were swollen.

There was no stiffness of the neck nor Kernig's sign; the knee jerks were active. The white blood count was 6,000. Cultures and a Wassermann test of the blood and the spinal fluid were negative. The first spinal fluid, taken February 24, was normal and contained 8 cells; three days later the cells had risen to 40 (all mononuclears).

The disease ran a febrile course for a few days after the admission of the patient, but the temperature became normal, March 1. Complete recovery from the acute illness followed.

The four cases so far recounted all went on to recovery. They showed involvement of several of the cranial nerves, notably the oculomotor group and facial, together with symptoms indicating involvement of the long projection tracts to the extremities. The course was mildly febrile and was accompanied in the early stages by headache and nausea. In none of them, however, was lethargy an outspoken feature.

Fig. 2 (Case 6).—Pons, × 45; engorged vessels under fourth ventricle; vessels surrounded by collars of mononuclear cells; diffuse exudate in gray matter and several small hemorrhages to right of largest vessel.

The three following patients succumbed to the disease:

CASE 5.—Private A. I., aged 22, white, had an attack of sore throat, February 3. Two days later he began to have griping pains through the abdomen which localized in the right iliac fossa; he felt nauseated and vomited, but had no fever. With a provisional diagnosis of appendicitis, he was under observation on the surgical service. About a week later, after subsidence of these early symptoms, his temperature rose to 102 and his right tonsil became larger and inflamed. He again complained of headache and pain in the abdomen, in addition to which he had considerable dyspnea, respirations, February 9, 10 and 11, reaching from 40 to 60. February 12, the respirations dropped to 30. Three days later he became unconscious and cyanotic, the respirations at this time being shallow, with frequent periods of apnea. All reflexes were absent; the pupils were 5 mm. in diameter and did not react to light. Artificial respiration was used for several hours, during which he would regain consciousness at times and answer questions, and in these periods of consciousness the tendon reflexes were exaggerated. Ophthalmoscopic examination was negative. There was no rigidity of the neck.

The patient died, February 18, the temperature having been normal for the two days that preceded the patient's death.

The urine contained a faint trace of albumin, but otherwise was negative. The leukocyte count, February 6, revealed 7,000, and February 12, 10,700.

The spinal fluid, February 2, 1919, contained 30 cells, (90 per cent. mononuclears). Sugar, albumin, 0. Culture and Wassermann negative.

CASE 6.—Private A. L., aged 24, white, admitted to the base hospital, January 31, complaining that he had not felt well for ten days, had a "swimming in the head" and for a few days previous to admission had felt weak. He was constipated, but there was no headache and his appetite was good. His temperature was 102 and the pulse 88. Physical examination revealed nothing positive except some congestion of the throat and a flushed face.

February 2, the patient became noticeably lethargic and would lapse at times into a muttering delirium. The delirium became aggravated, and restraint was needed to keep him in bed. About this time he was having difficulty in swallowing, and would regurgitate food through the nose. Later he became incontinent. February 6, a left facial paralysis was noted, and the knee jerks were exaggerated. The delirium gradually subsided and lethargy ensued. The patient passed, February 11, into a semicomatose condition from which he could sometimes be roused. The following day the coma deepened and he became cyanotic. He died, February 19, the temperature rising just before death to 107.

Laboratory tests: Blood cultures, February 3 and 4, were negative. Throat cultures for diphtheria and hemolytic streptococci were negative. Leukocyte counts were: January 31, 8,200; February 2, 7,600; February 4, 7,900.

The spinal fluid, February 5, contained 29 cells (large mononuclears, 10 per cent.; small mononuclears, 90 per cent.); globulin, negative; February 7, 106 cells (large mononuclears, 6 per cent.; small mononuclears, 94 per cent.); globulin, negative; February 12, 110 cells (large mononuclears, 40 per cent.; small mononuclears, 60 per cent.); globulin, negative. Cultures and the Wassermann test were negative.

Case 7.—W. F. H., civilian, white, aged 32, seen in consultation with Dr. W. P. Hoy of Petersburg, Va., just before I left Camp Lee, March 11, was an electrician by occupation. He never had any serious illness before and was the father of three healthy children. January 29, he suddenly became prostrated, felt feverish, and went to bed. His wife did not call in a physician until February 2, five days later. At that time he complained of nausea, and he had vomited several times. There was a marked tremor of both upper and lower extremities, and his temperature was 102. The temperature had dropped in a day to 99, and had not risen above 100 subsequently. February 4, he became very lethargic, associated at first with a low muttering delirium, and for the next five weeks he slept continuously, it being necessary to rouse him to give nourishment. Typhoid fever was suspected, but repeated Widal tests and blood and stool cultures failed to verify the diagnosis. Wassermann tests on the blood were negative.

When I saw the patient, March 11, he was asleep on his side with both arms extended forward. Before the patient was roused, one of the arms was raised; it remained apparently fixed. The other arm was placed in a similar posture; it too continued to hold its position. The muscles of both arms tired in a few seconds and the limbs dropped. Later, when the patient was roused, similar catatonic phenomena were obtained. After being awakened, the patient was found to be extremely well oriented as to time and place, and answered questions intelligently, though sleepily. Examination of the cranial nerves detected a weakness of the left external rectus. The patient was asked if he saw double, but replied that whereas he had been very much annoyed by the "doubling up" of objects when he was first taken sick, this had passed off in a few days, and at the time of the examination this diplopia was not present. There was a slight droop at the left corner of the mouth, the weakness of the muscles in this neighborhood being more noticeable when he talked. The tendon reflexes were normal, but the cremasterics and abdominals were hypo-active. After the interview, the patient promptly fell asleep again, and subsequently after being roused sufficiently to assist in getting himself in position for a lumbar puncture, he fell asleep during the operation, which was done without anesthesia. The patient seemed to be improving, for during the last week the lethargy, though still marked, was not so profound as it had formerly been.

I did not see this patient again, but the following notes complete his history: March 12, he was given 50 c.c. of serum from a convalescent case of "lethargic encephalitis," plus 350 c.c. of physiologic sodium chlorid solution intravenously, and also 30 c.c. of serum by lumbar arachnoid injection. A marked febrile reaction resulted. March 14, this intravenous injection of serum was repeated, and 30 c.c. of 25 per cent. glucose were given in the same manner.

March 15, respiration rose to 38; March 17, the patient died in coma.

Fig. 3 (Case 6).—Midbrain, × 72: of the two vessels in the meninges the smaller appears normal; the larger shows a mononuclear cell infiltration of its wall for about one-half its circumference; there is almost no meningitis.

A necropsy was performed, and enough tissue has been seen to say that the lesions are similar in character and distribution to other cases of "lethargic encephalitis."

The following two histories were kindly furnished by the Army Medical Museum when the material for pathologic study was transferred to us:

Case 8.—Sergeant W. H. E., aged 27, white, admitted to the hospital, Jan. 22, 1919, about noon, complained of headache and seeing double, had been complaining of headache for three or four days, but did not seem sick. At the hospital he walked to the ward, but once in bed he dropped into a drowsy, semicomatose condition from which he could be roused to answer questions, but into which he would immediately return. Examination revealed nothing but fine râles in both chests. Blood culture was negative. He died at 6 o'clock the following morning, January 23, and was said to have had a convulsion before his death. No history of any drug habit or of recent drinking could be obtained from the man or his friends.

Case 9.—Private D. S., aged 23, white, a man of good habits, with no significant family or personal history, was taken sick, Jan. 23, 1919, complaining of severe frontal headache and pain in the eyes. He also found that he could not keep his eyes open, and he had been very drowsy since the onset. He was admitted to the hospital, January 25, at which time the only abnormality noted on examination was congestion of the eyes and enlargement of the tonsils. Nevertheless a provisional diagnosis of "acute encephalitis" was made.

During the following week the drowsiness of the patient persisted and there developed signs of organic neurologic disease — sluggish pupillary reflexes and diminished knee jerks and Babinski reflex, external strabismus and signs of meningeal irritability, Kernig's sign and stiffness of the neck, so that a diagnosis of "tuberculous meningitis" was made.

Another week passed in which the drowsiness of the patient deepened to stupor, and twitching of hands and arms was noted. The week following February 9 the patient seemed better, and would answer questions and smile; the reflexes at this time were found normal, but there was an ocular squint.

Toward the end of February, marked rigidity was noted, and the patient became markedly weaker. At this time the left retina was edematous. He died, March 3. Laboratory data were:

January 25, blood count, 14,600; polymorphonuclears, 83 per cent.
January 27, blood count, 13,600.
January 28, blood count, 16,600; polymorphonuclears, 74 per cent.
February 2, blood count, 15,600.
January 28, spinal fluid, 60 cells; globulin +.
January 31, spinal fluid, culture negative; smears revealed no organisms.
February 12, spinal fluid, no tubercle bacilli.
February 26, spinal fluid, 5 cells; globulin +; sugar +.
February 1, Wassermann test negative.
February 26, blood culture, sterile.

PATHOLOGIC EXAMINATIONS

Pathologic examination of four cases is given. As all four cases show varying degrees of what appears to be an identical pathologic process, the case presenting the most marked lesions will alone be given in detail:

CASE 6 (Camp Meade, A:115).—Death occurred supposedly five days after the onset of symptoms. Necropsy was performed by Lieut. W. P. Finney four and one-half hours postmortem. The diagnosis from gross examination was: lobar pneumonia, very slight, right lower lobe; chronic fibrous pleuritis, right; moderate congestion of viscera. "No adequate anatomic lesions to account for death." The notes on the head at the necropsy were:

"The pia is thin and delicate; there is scarcely any fluid beneath it. The surface of the cortex is pinkish by numerous injected capillaries; the convolutions are not flattened. There is no exudate over the base of the brain, and only a small amount of clear cerebrospinal fluid. There is no bulging of the brain into the foramen magnum."

On examination of the formaldehyd-hardened brain at this laboratory the following notes were made:

Everywhere blood vessels, arteries and veins are considerably more prominent than normal, though not greatly so. The pia-arachnoid is nowhere certainly abnormal, although the cerebral markings underlying some of the sulci of the convexities are more obscure than normal. Similarly, over the base the nerve roots cannot be traced to their cerebral connections with the clearness that is usual. Films made from the cortical subarachnoid space show a few red corpuscles and a few mononuclear cells, some containing granules. The convolutions all seem a little flattened. On section, the ventricles are of customary size, the ependyma and choroid plexuses probably normal, though the latter are slightly redder than usual. Throughout, the cut surfaces show unusually prominent vessels; but no frank hemorrhage is seen and no other abnormality noted. Pieces were fixed in liquor formaldehydi and Zenker formaldehyd solution (formol).

Microscopic Examination.—Blocks were cut and embedded in paraffin, sectioned at 10 microns and stained with hematoxylin and eosin, toluidin blue, methylene blue and eosin, Mallory's connective tissue stain and neuroglia stains.

Sections from the cerebral cortex (temporal, occipital and parietal lobes) showed in each instance slight involvement of the meninges. The arachnoid appeared more prominent than usual because of an increased number of young cells and fibers which appeared to be concerned with the abnormally dense arachnoid trabecular network present in this case. In the meshes of these trabeculae were seen scattered red corpuscles and numerous mononuclear cells, mostly large and frequently with pigment granules or blood inclusions. No polymorphonuclear leukocytes and no organisms were seen. The cortical gray and subcortical white matter appeared normal except for engorgement of vessels (Fig. 1).

Fig. 4 (Case 6).—Midbrain, × 610; diffuse mononuclear exudate with neurophagia in gray matter near Sylvian aqueduct.

A single block from the internal portion of the brain showed the following: The corpus callosum contained two small hemorrhages, the larger just visible to the naked eye, evidently several days old, but without signs of reaction about it, and in the lenticular nuclei several vessels of small caliber showed in their perivascular spaces a few red corpuscles and mononuclear cells. This picture in much more conspicuous form in sections of the brain-stem will be described later.

The third and lateral ventricles, together with the choroid plexus of each, appeared normal, as did the fornix and internal capsule.

Six sections of the brain-stem were studied at three levels of the medulla, two of the pons, and one of the mid-brain. All sections showed an intense perivascular infiltration of many of the vessels, both large and small. The vessels lying just under the fourth ventricle most constantly showed this picture in the highest degree, and here too an occasional small hemorrhage was visible (Fig. 2). Perivascular infiltration was, however, not confined to vessels of the dorsal portion or to the gray matter, but was frequently intense in the region of the fiber tracts. Occasionally a vessel was cut in such a way as to communicate with the meninges, and the perivascular exudate might be seen extending out apparently into the subarachnoid space. Several vessels in the meninges cut transversely also showed collars of cells closely surrounding them; there was, however, no evidence of a generalized meningitis except of a very mild degree, as already described as occurring over the cortex (Fig. 3). That this perivascular infiltration was not confined to the central nervous system was also evident from such a vessel appearing in the root of the twelfth nerve. The cells making up this perivascular ring consisted chiefly of small mononuclear cells, some of which were unquestionably lymphocytes and plasma cells, and some larger mononuclear cells containing pigment granules; one cell was here seen in mitosis; also there was usually a number of red corpuscles, at times fibrin and frank hemorrhage. In many of the smaller vessels there was evidence of proliferation of the intimal cells of moderate degree; the walls of larger vessels appeared normal with the methods employed.

A second type of lesion was a diffuse invasion of the nervous tissue by mononuclear cells, including lymphocytes and plasma cells, and in some places by mononuclear phagocytes. This was especially true of the gray matter, but it was also seen in the white. Neither polymorphonuclear leukocytes nor organisms were seen. This diffuse invasion was always noted in greatest degree about engorged vessels and about those showing considerable perivascular infiltration. The nerve cells in areas of infiltration might be normal, but more frequently showed chromatolytic changes; only in the denser areas of cellular infiltration was there death of nerve cells and neurophagia (Fig. 4). Many cells thought to be young glia cells were present in these areas, and occasionally mitosis was visible; no young glial fibrils, however, were seen. While the exudate appeared predominantly in the gray

matter, there was no evidence of selection for the nuclei of the cranial nerves. These, however, were seen to be affected, notably the motor nuclei and especially those of the fourth and the fifth cerebral nerves.

The cerebellum showed few examples of perivascular exudation and none of diffuse infiltration. The Purkinje cells with the methods used showed much variation in staining properties, and many appeared to be absent. This condition was also noted by Marinesco.

The spinal cord was not removed at necropsy.

Microscopic examination of the heart, small intestine, and lung failed to show vascular or exudative lesions as described in the brain, and in other respects appeared essentially normal.

Case 7 (Camp Lee, A-245).—Death occurred fifteen days from the onset of symptoms. Necropsy was performed by Lieut. C. H. Iden one hour postmortem.

The diagnosis from gross examination was old adhesive pleuritis. The primary cause of death was not determined.

A note on the brain at necropsy read: "Over the left parietal lobe there is moderate injection of the blood vessels. Spinal cord shows no abnormality."

The formaldehyd-hardened brain in gross showed: "Only abnormality made out is intense congestion of all vessels, arteries and veins. No opacity of leptomeninges anywhere. Brain does not seem swollen. On palpation, however, whole brain is soft and feels as if ventricles were dilated. On section, however, this sense of fluctuation is found to be due to the softness of structure, the ventricles being normal in every way."

Blocks were cut and placed in Zenker-formeldehyd solution, embedded in paraffin, and cut and stained as in the previous case.

Microscopic Examination.—Two total sections through the medulla and three through the pons were studied. Perivascular exudate, similar in type to the foregoing case, was seen throughout the brain-stem from the lowest level (pyramid decussation) to the highest (the nucleus of the fourth nerve). The picture was less marked than in the first case both in the amount of exudate and in the number of vessels involved. The same distribution was shown, vessels in the gray matter about the canal, under the fourth ventricle, and around the aqueduct being most affected, although vessels in the fillet and anterior motor columns also are involved. The asymmetrical appearance of these vessels was striking. Diffuse cellular infiltration was neither extensive nor intense in this case, and was frequently closely confined to the region of vessels with perivascular exudate. Perhaps the greatest amount appeared in the medulla at the level of the twelfth and the tenth nerves, some of the nerve cells of which showed degenerative changes. Some sections, however, were entirely free from exudate, even in areas about infiltrated perivascular spaces.

In the basal ganglions and internal capsule very few vessels were seen to have little perivascular and intra-adventitial exudate; and no diffuse exudate appeared in this territory.

The cortex in three areas was essentially negative. An occasional vessel here presented only a few blood cells and granule-laden phagocytes in the perivascular space.

Sections at practically every level of the cervical cord, and two sections from the thoracic cord, showed rarely a little perivascular exudate, but no obvious abnormality of nerve cells.

The meninges presented a picture similar to Case 1, a small amount of free blood and numerous large mononuclear cells being present. No organisms anywhere were seen.

Case 8 (Camp Lee, 246).—Death occurred twenty-nine days from the onset of symptoms. Necropsy was performed five hours postmortem by Lieut. C. H. Iden.

Diagnoses from gross examinations were: myocardial insufficiency; dilatation of heart (right); right lung, hypostatic, pneumonia base, lobar; left lung, passive congestion; passive congestion of liver.

A note on the brain at necropsy read: "Blood vessels of the pia are markedly injected. The surface of the pia is of a more pinkish tint than normal."

The brain and spinal cord were immediately sent to the Army Medical School, where cultures and inoculations were made as described below.

At this time (twenty-eight hours after the necropsy), great engorgement of the cerebral and spinal vessels was the only abnormality noted. On section, the ventricles appeared of normal size and contained a small amount of clear fluid. The cut surface of the brain and cord everywhere showed dilated vessels but no hemorrhage nor other abnormality. Tissues were fixed in Zenker-formaldehyd solution.

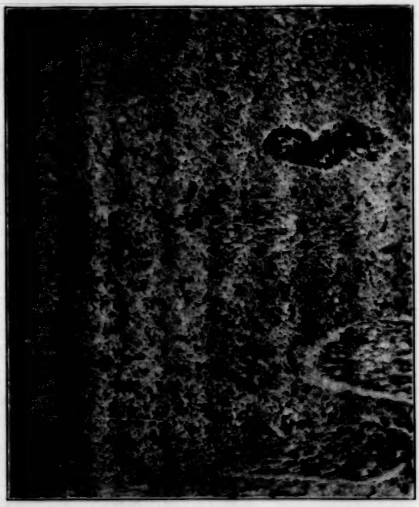

Fig. 5 (Case 8).—Midbrain, × 66; capillary engorgement and perivascular exudate; also diffuse exudation of white matter.

Microscopic Examination.—Five sections from different parts of the cortex showed no abnormality other than a little free blood in the subarachnoid space.

Numerous sections from the cervical and thoracic spinal cord showed excessive vascular congestion, but only rarely a little perivascular exudate, and no diffuse infiltration and no certain nerve cell changes.

The brain-stem was studied in six sections, extending from a point just below the pyramidal decussation to the level of the third nerve nucleus. The same types of lesion were apparent in this case as in the two preceding, but were less marked and less extensive. In the medulla and lower pons the slightest possible perivascular exudate was seen in a few of the vessels, and no abnormality of parenchyma was evident. At the upper pons level, more vessels showed a moderate amount of exudate and there was an accompanying diffuse infiltration of the subependymal gray. Nerve cells, however, showed little change. More marked was the very considerable exudate which is seen in the white matter just external to the red nucleus, in the neighborhood of the substantia nigra. Here were seen large numbers of mononuclear cells (some phagocytic), lymphocytes and plasma cells (Figs. 5, 6 and 7).

Sections of the basal ganglions and internal capsule showed vessels with perivascular exudate in both. In the thalamus there were limited areas of diffuse parenchymatous exudate of mononuclear cells and cellular gliosis.

In the anterior lobe of the pituitary, two vessels showing perivascular infiltration were seen.

Throughout the brain there was the same slight mononuclear meningitis as described above.

Case 9 (Camp Custer, A-249).—Death in this instance occurred thirty-nine days after the first symptoms had manifested themselves.

At necropsy, the diagnosis from gross examination was: acute cardiac dilatation, right auricle and ventricle; congestion of all viscera. Erosion of stomach (postmortem?).

A note on the brain at necropsy read: "There is a slight flattening of the convolutions. The surface vessels of the brain are more engorged than usual. No changes are to be noted in or along any of the vessels. The pia-arachnoid is smooth and everywhere normal in appearance. . . . The whole brain is very soft. On section there is marked engorgement of all vessels, little droplets of blood welling up from all the vessels cut across. . . . The ventricles are not distended and the ependyma is normal. There are no changes to be made out in any of the cranial nerves."

Microscopic.—The lesions were the same in this case as in the others. Also the distribution was similar. Throughout the brain-stem, from the pyramidal decussation to the corpora quadrigemina, and in the lenticular and caudate nuclei and thalamus, there were many vessels surrounded by dense collars of mononuclear cells, frequently with blood elements intermixed. No hemorrhage into the parenchyma was seen.

If one may judge by the intensity of the perivascular and diffuse exudate, the severity of the process in this case was greatest in the upper region of the pons. In this case, more than in any other, was seen extreme invasion of the white matter, the lemniscus being the seat of intense monunuclear cell infiltration.

Here, as in other cases, there was no predilection for the cerebral nerve nuclei, and while abnormal nerve cells were seen, no typical picture of neurophagia could be found. Sections from all levels of the cervical cord appeared normal. The cortical gray showed no abnormality, but in the subcortical white matter there was an occasional vessel with a small amount of exudate or merely a cell or two.

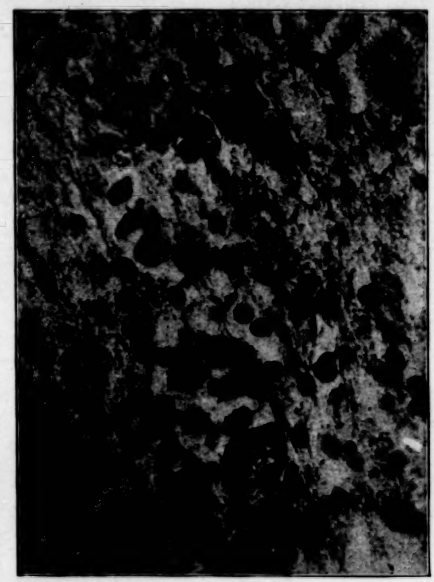

Fig. 6 (Case 8).—Midbrain. × 720: same area as Figure 5; type of diffuse infiltration with plasma cells and lymphocytes.

SUMMARY OF PATHOLOGIC FINDINGS

The pathology of these four cases of so-called "lethargic encephalitis" was presented with a varying degree of completeness. The brains all appeared alike. A great degree of engorgement of all vessels was conspicuous; moreover, the pia was noted as pinker than normal, and this is explained by the free blood present in the meninges. The brains were abnormally soft to touch. In every case the chief seats of the lesions were the brain stem and the basal ganglions. The important lesions may conveniently be divided into (1) perivascular exudation, and (2) diffuse infiltration of parenchyma. While both types of lesion vary greatly in intensity, extent and symmetry, they were seen especially in the gray matter about the canal, fourth ventricle and aqueduct, though deeper tissues were also affected, and white matter was not spared. The cells concerned in both types of lesion were all mononuclear; a small mononuclear cell and a large mononuclear cell, frequently phagocytic, many of which appear to be neuroglia cells, together with the lymphocyte and plasma cell, were recognized. Polymorphonuclear leukocytes were conspicuous by their absence even in the case of short duration. Mitotic figures appeared in small numbers both in the perivascular and in the diffuse exudate. That the two processes were interrelated is apparent from the appearance of diffuse exudate chiefly in the immediate neighborhood of affected vessels. That the diffuse infiltrating exudate was not necessarily related to a destructive process is borne out by the normal or only slightly changed appearance of nerve cells in its midst; however, when the exudate was excessive, marked nerve cell changes, including neurophagia, resulted.

Bacteria were sought for with care and none were seen.

Lesions that may be considered subsidiary in our cases were hemorrhage and meningitis. Hemorrhages were few in number and very small, so insignificant, in fact, that they utterly failed of detection in the gross examination. However, a certain amount of free blood and fibrin, mixed with the perivascular exudate, was frequently seen. Blood vessel changes were of two types. There was almost constantly evidence of proliferation of the intima in vessels in areas of exudation, those in unaffected territory usually showing no abnormality. The second type of lesion noted was infiltration of the vessel walls (especially intra-adventitial), with mononuclear cells, chiefly lymphocytes and plasma cells. This condition was observed by itself in the meninges (Fig. 3) and associated with perivascular exudate in the substance of the brain. It is likely that more of the exudate was intramurally situated than appearance indicates; this would explain the very moderate cellular infiltration of the meninges and associated low cell-count in the spinal fluid.

The cord and organs in the cases examined appeared essentially normal. It is unfortunate that no notes on the root ganglions are available.

Lesions in the cerebral cortex were in all either nonexistent or negligible.

EXPERIMENTAL INOCULATIONS

Inoculation experiments were carried out with fresh material from Case 8 at the Army Medical School,

Washington, by Colonel Russell. Under aseptic precautions the spinal dura was opened twenty-eight hours after death, and cultures (aerobic) were taken from the subdural and subarachnoid spaces, respectively; these cultures were found to be negative. With sterile precautions, specimens from three levels of the cord were then removed, macerated with sand and saline, and filtered through cotton. Injections with the filtrate were made as follows:

Monkey 1 received 1.2 c.c. by intracerebral inoculation. Monkey 2 received 2.5 c.c. by lumbar subarachnoid injection. A rabbit and a guinea-pig each received 1 c.c. intraperitoneally. A mouse received 0.5 c.c. intraperitoneally.

None of these animals became in any way sick, the monkeys remaining under observation for seven weeks.

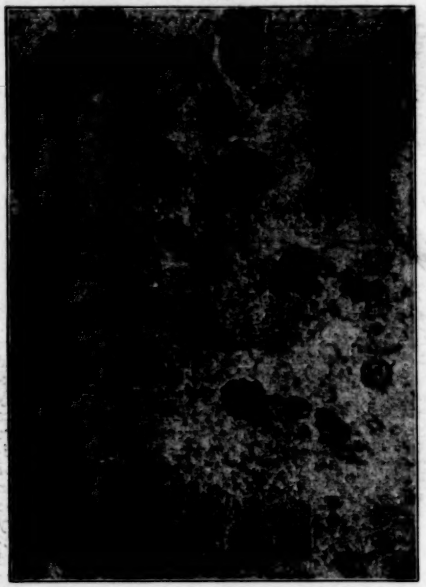

Fig. 7 (Case 8).—Midbrain. × 1060: same area as Figure 5; granule-laden mononuclear phagocytes.

Cultures taken from the lateral and third ventricles (twenty-eight hours postmortem) were negative.

The failure to reproduce the disease in these two monkeys does not exclude definitely the possibility of future transmission to such animals, for in the first place the filtrate used was from the spinal cord, which did not show pathologic changes to any extent, and secondly, the patient died late in the course of the disease (twenty-ninth day).

From Patient 3, eleven days after the earliest symptoms, spinal fluid was removed and injected as follows:

Monkey by lumbar inoculation, 3 c.c. Rabbit by puncture of the cisterna magna, 2 c.c. Rabbit by puncture of the cisterna magna, 2 c.c., together with a small amount of horse serum given to produce a sterile meningitis.

All of these animals remained unaffected.

SUMMARY

All of the nine cases presented may be logically grouped under the title "lethargic encephalitis."

The onset of symptoms was always insidious, headache, malaise, weakness and vertigo being commonly complained of. Early symptoms of probably greater significance were sore throat, diplopia and always fever. That the prodromes are likely to be confusing is certain from the diagnosis "hysteria" having been made in two cases, in one of which the patient died within five days of the onset.

It was unusual to find signs of organic nerve disease in the first week of illness, and although symptoms referable to such disease undoubtedly occurred early, they were usually of such transitory character that their significance was often not appreciated until later.

By the second week—sometimes later still—a widespread organic neurologic disorder became evident, when cerebral symptoms appeared. Drowsiness occurred in almost every case, frequently developing into coma, and at times alternating with a state of irritability or anxiety. In spite, however, of an apparently clouded mental condition, orientation and cerebration were usually unaffected, until just before death.

Long projection fiber tracts to arms and legs showed profound disturbance in seven cases, as indicated by ataxias, spasticities, the Babinski reflex, and clonus. The only symptoms and signs of a focal character were referable to the brain-stem, and these were present in all. Diplopia was complained of in seven of the nine cases, although, curiously enough, oculomotor palsy was seldom actually seen, doubtless because of its transitory nature. The second most frequent focal disorder was weakness of the facial muscles, usually one-sided, a condition seen in five cases. Pupillary disturbance, irregularity, inequality and abnormality of reaction were common, and weakness of the jaw muscles was observed three times. Profound disturbance of respiration was twice noted.

Several points on the clinical side should be emphasized; the insidiousness of the onset, the recurrent and incomplete nature of the paralyses, and implication of cerebral nerves confined to motor function. To this add spasticities and ataxias caused by interference with the projection fiber systems, and a syndrome is presented which is admirably explained by the diffuse infiltrating exudative process of this disease.

The symptomatology and pathology as shown in our cases correspond very closely with the descriptions as given from France, Vienna, and England, and with other reports from this country.

As to etiology: Wiesner and Breinl assert that they have transmitted the disease to monkeys, but the former apparently did not see the organism in the original tissue, and the cases of the latter as reported suggest more typical poliomyelitis rather than this disease. Marinesco finds two types of organisms in his slides. We have neither seen organisms, nor have we been able to grow them from the cerebrospinal fluid or from the nervous system postmortem; inoculation experiments, so far as they go, are negative, as were those of McIntosh. It is our opinion, however, that further attention should be given to inoculation work.

We wish to acknowledge here the valuable service rendered to us by Major Tasker Howard at Camp Lee, Major Russell Cecil and Lieut. John E. Dwyer of the Army Medical School, and Major R. G. Hussey and Lieut. Henry R. Muller of the Army Medical Museum.

THE DISPOSITION OF THE SAC IN HERNIA

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CHICAGO

Since the earliest times, efforts have been made to cure hernia by operation, and these efforts have constantly been renewed and methods have been improved on because of the unreliability of the older methods of retention. Good results were not obtained until the beginning of the antiseptic era, and at the present day the procedures formerly adopted have only a historical interest. For centuries the radical operation was practiced only by strolling laymen, who were known as "hernia cutters" (Bruchschneider). The results were poor; and in the most frequent variety, the inguinal hernia, the ligation of the sac was always accompanied by castration. For this reason the operation fell into disrepute. The craft was considered dishonorable; and in the eighteenth century, when reputable surgeons began to operate for the relief of hernia, the hernia cutters completely disappeared.

The first to apply antiseptics to the surgery of hernia were the English. They were promptly followed by the Germans, who became extreme antiseptists, and commenced to cut freely on reducible hernia. The Americans, who were largely influenced by the German school, soon followed, while the French and Italians have been the latest to adopt kelotomy.

It is my purpose here to present the various methods of the disposition of the sac, and to submit for consideration a method which I have been unable to find in the literature, and which I have found to be very successful.

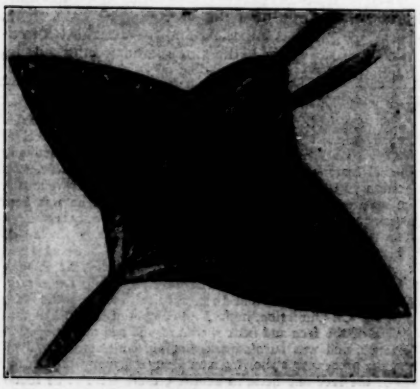

Fig. 1.—Isolation of the sac from the surrounding structures well into the internal abdominal ring.

THE BASSINI METHOD

1. The Bassini method is doubtless the most common. When the sac has been exposed at the site of the superficial ring, it is traced backward through that opening to its junction with the parietal peritoneum lining the general peritoneal cavity; then after opening it is removed flush with the parietal peritoneum by transfixation and ligature. Then it is cut away, the stump retracting into the abdomen.

2. When the sac cannot be isolated flush with the parietal peritoneum, owing to adhesions to the wall of the sac or in sliding hernias, the sac is transfixed by ligatures as high as possible, the redundant sac is

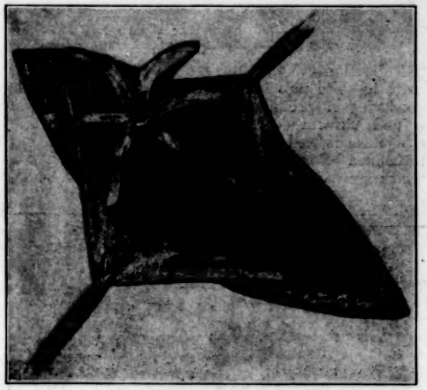

Fig. 2.—Sac cut into six ribbons.

cut off, and the stump is brought underneath the muscles (conjoined tendon) by a staple suture.

MACEWEN'S METHOD

3. The Macewen method consists in throwing the sac of the hernia into a series of folds by the introduction of a suture along the length of its long axis and then fixing the retracted sac into the tissues near the site of the deep ring.

KOCHER'S METHOD

4. *Original Method.*—A. An incision is made through the aponeurosis of the external oblique above and external to the site of the deep ring sufficiently large to introduce a pair of forceps down the inguinal canal. The forceps catch hold of the sac and drag it bodily upward and outward through the opening in the aponeurosis, and there it is fixed in front of this layer by means of suture.

B. *Modification of Method. Invagination and Transplantation (Verlagerung).*—This method is used when the sac is complete, not incised or torn in previous manipulations. Curved dressing forceps grasp the apex of the sac; the sac is then invaginated around the forceps; the forceps now enter the external oblique ring and pass underneath the aponeurosis of the external oblique until it is opposite the internal ring. A small incision is made in the aponeurosis over the forceps and deepened until it cuts through the external layer of the sac. The invaginated sac is grasped by artery forceps, pulled out and caught, transfixed, ligated and cut away, and the stump is allowed to slip back.

C. *Modification of Method. Lateral Transplantation (Verlagerung).*—This method is used if the invagination method is impossible because of the shortness, tension, and thinness of the sac, or when it

has required incision. The tip of the sac is caught in curved dressing forceps and is then passed through the external inguinal ring underneath the aponeurosis of the external oblique up to a point opposite the internal ring. At this point a small incision is made in the aponeurosis, and through it the sac is pulled out (not invaginated), then pulled taut, transfixed, ligated and the distal portion cut away. The stump slips back and the small incision in the aponeurosis is sewed up.

BALL'S METHOD

5. By Ball's method the sac is twisted into a dense cord, so as to throw it into a series of folds, thereby producing a prominence internally rather than an infundibuliform depression. To prevent untwisting, a ligature is tied as high as possible, and it is also transfixed below the ligature by a suture, the ends of which are passed through the abdominal parietes.

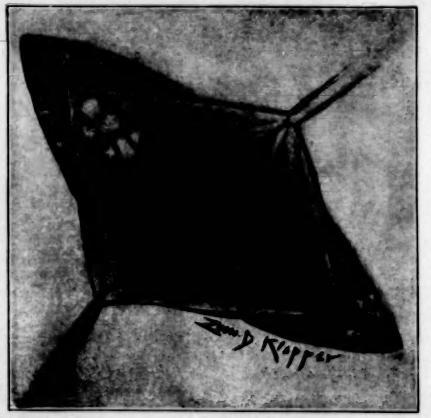

Fig. 3.—Pad of knotted sac ribbons after tying of each pair of ribbons, but not yet replaced into the internal abdominal ring.

BARKER'S METHOD

6. In Barker's method, the neck of the sac is isolated, ligatured and divided, the fundus being left in situ, while the suture used in tying the neck is employed as the first suture to close the deep part of the canal. By this means it is hoped that the neck of the sac will be displaced and, hence, more satisfactorily occluded—which I doubt very much.

AUTHOR'S METHOD

The method which I would present I term the "auto sac closure." It consists (when the sac is long enough) in the usual isolation of the sac from the cord and the surrounding structure well into the internal abdominal ring. When the sac is opened at its apex, it is freed from its contents and divided longitudinally into four, six or eight ribbons, which run nearly to the base of the sac. Then each opposite two ribbons are seized with hemostats and tied together with a single knot, each successive knot overlying the preceding one, thus forming a solid pad of the sac itself. To prevent slipping of the knots, a catgut ligature, if desired, can be placed around the entire knot and the ribbon ends cut off. Then this pad of knotted sac ribbons is reduced into the internal ring, and one proceeds with the usual method of closure of the canal.

The advantages of this method are:

1. The solid bulwark of knotted sac which lies internal to the internal abdominal ring prevents the abdominal contents from again descending into the canal.

2. It does away with the infundibular shape of the sac, which is conducive to recurrence.

3. There is less likelihood of transfixing any of the sac contents by ligature.

4. The introduction of a foreign body like catgut into the peritoneal cavity, especially if it should not be sterile, is eliminated, though this point, to be sure, is of minor importance.

I have used this method in innumerable cases in my service at the Michael Reese Hospital, and have yet to see a recurrence of the hernia.

5 North Wabash Avenue.

EXFOLIATIVE DERMATITIS DUE TO ARSPHENAMIN

REPORT OF A FATAL CASE

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It has been recognized for some time that arsphenamin could, when given intravenously, cause arsenical poisoning. At the base hospital at Camp Jackson, there have occurred four cases within the past five months. The most typical of these—a fatal one—is here reported.

This fatal result followed the intravenous administration of 0.8 gm. of arsphenamin. The case, in its general features, bears the stamp of arsenical intoxication. The clinical diagnosis was confirmed by abundant laboratory data.

REPORT OF CASE

J. C., a private, aged 27, in a routine examination of his company gave a positive Wassermann reaction. He had at that time no symptom or sign of syphilis, and denied any venereal history. His physical condition was excellent. An injection of 0.4 gm. of arsphenamin was given intravenously. The reaction following this was so marked that he was kept a week in the hospital. He was then sent to duty, although there was present, at the time of his discharge from the hospital, a peculiar keratoid condition of his face and neck. From his second dose, received one week later, he experienced no apparent reaction. Ten days following the second injection, he was admitted to a medical ward at the base hospital. On admission, he had no complaint other than that the skin of the face and neck was hard and red and knobby to the touch, and was burning and tingling considerably. Even then, the process was showing a tendency to generalize. On the skin of the face and neck, in addition, there were to be found areas of superficial branny desquamation. Where the process was oldest, the skin color had faded to a dull red. In the superficial layers there was a marked amount of a dirty brown pigmentation. The eyes were the seat of a moderate conjunctivitis. The ocular media were normal. The fundus showed no sign of inflammation. The external ear showed, from the first, a distinct seborrheic eczema, which was apparently an independent process, so markedly did it differ from the other skin condition.

There was, at this time, no demonstrable evidence of polyneuritis. Reflexes were equal and well balanced, and there

were no sensory disturbances. It was only after the first week that he showed any laryngobronchial catarrh. At no time during his illness did he have abdominal pain or diarrhea. The urine content and output were within normal limits. Arsenic, while present in easily demonstrable amounts, was productive apparently of no renal irritation. The phenolsulphonephthalein output at this time was 60 per cent. for the two hour period.

Four days after admission, the patient's skin began to exfoliate. The skin of the face and arms showed this most

Fig. 1.—Exfoliative dermatitis: marked pigmentation.

markedly. As the exfoliation became generalized, there appeared a moderate fever. The pigmentation, mentioned before, became extreme; especially was this true in the axillae and on the forearms. At the same time the skin of the face—at first dry and hard—now began to fissure and to weep a viscous fluid, intensely disagreeable in its odor.

Exfoliation became steadily deeper and more extensive, reaching its maximum about thirty days following the first dose of arsphenamin. The scales, which at first had been thin and parchment-like, now began to increase in size and in thickness and to slough away, leaving a basement layer which was soft and bleeding. With the scales disappeared the pigmentation. The mouth became very sore; especially was this true of the tongue, the papillae of which were enormously enlarged, the mucosa being covered by a thick fur.

Even at this time, four weeks after the first dose of arsphenamin, the only evidences of constitutional disturbance were the continuing moderate fever, and a pronounced and peculiar leukocytosis which will later be described in detail. The mind was absolutely clear. The skin inflammation, however, caused so much tingling and discomfort that sleep was impossible except as an effect of opiates.

Prior to the beginning of the deep exfoliation, the heart remained strong and the lungs clear. As the exfoliation progressed, toxic symptoms appeared and ran hand in hand with it. Blood pressure, which had up till then remained at 130 mm. or above, now sank to below 120 mm. The pulse rate mounted steadily, as did the fever. Râles appeared in the lungs; the voice became husky, and a slight, productive cough appeared. The picture was that of the so-called laryngobronchial catarrh, which is so often found in the literature referring to chronic arsenical poisoning.

Coincident with the foregoing, the urine output steadily declined, and there was, for the first time, a trace of albumin. During the seven-day period, the phenolsulphonephthalein excretion index sank from 60 per cent. to 37 per cent. for the two-hour period. The latter reflected accurately the progressive physical and mental deterioration of the patient. During the same seven-day period the nonprotein nitrogen of the blood remained low, at the conclusion of the period being 0.0576 gm. per hundred c.c., whereas one week before it had been 0.056 gm.

As the exfoliation became more and more extreme, mental hebetude gradually deepened. Now, for the first time since his admission to the hospital three weeks before, there was some sensory disturbance, in that the whole left upper extremity became very insensitive to both pain and temperature. The patient suffered very little now, probably because his mental acuity was so much decreased. Fever was constant, and showed a distinct tendency to rise. Stupor deepened into coma, and despite active eliminative therapy, light convulsions began to occur, these being preceded and followed by localized muscular tremors. As a result of hot packs, the mental condition cleared somewhat, and the convulsions disappeared; the general condition, however, remained very poor.

It was only after three weeks in bed that the patient began to waste. This may be explained partly by the fact that he suffered at no time from either vomiting or diarrhea, and partly by the circumstance that up to within a day or two before his death, he partook willingly of large quantities of liquid nourishment. Toward the end, however, his mouth became so sore that feeding by means of the stomach tube had to be resorted to. When wasting did appear, it was very rapid. The body was now devoid of skin, so far as function was concerned. Bleeding fissures extended down and in places through, the basement layer. The exposed deeper layers had none of the pigmentation and induration of the original process.

The blood vessels showed, early in the course of the disease, evidence of severe trophic disturbance, in that the blood would extravasate from the capillaries at the slightest trauma. In the toes, this was apparently spontaneous, but the condition was especially marked in the fingers following needle puncture for blood counts. That this condition was due to blood vessel degeneration, rather than to any fault of the blood itself, is indicated by the fact that the coagulation time remained within normal limits throughout, never going above seven minutes.

The eyes, which had, as noted before, from the first shown

Fig. 2.—Exfoliative dermatitis: more advanced stage, with increased pigmentation.

a conjunctivitis, now began to show evidence of involvement of the deeper structures. The globes became sunken and flaccid, and there was decided atrophy of the orbital fat. The media became too cloudy to admit of fundus examination. When last seen, there was no optic atrophy. Cultures made of the conjunctival sac showed only the white staphylococcus.

On the thirty-fourth day after his first dose of arsphenamin, the patient lay in coma. The lung signs, which had been those of a moderate bronchitis, now began to be those of a bronchonpneumonia. The heart sounds became almost inaudible except for the sharp snap of the second pulmonic. The

patient's condition progressively deteriorated and he died on the thirty-eighth day following his first dose of arsphenamin.

The laboratory data, especially the blood picture from day to day, constitute the most interesting feature of the case.

TRACES OF ARSENIC IN URINE

The urine showed traces of arsenic as late as the thirty-fourth day. The urine remaining in the bladder after the patient's death also showed presence of arsenic. It was only toward the end that there was evidence of renal irritation. Considering the comparatively small dose of arsphenamin administered, it is rather remarkable that arsenic appeared so long and so consistently. Severi[1] found in repeated experiments that, with a single dose of toxic quantity administered by mouth, the metal was completely eliminated within five days, provided the kidneys were previously normal. Witthaus[2] considers this to be the usual result. Almqvist and Welander,[3] however, found weighable quantities in the urine as late as sixty days after the stoppage of the poison. The latter condition is more apt to occur when repeated small doses have been given. Yet Wood[4] found arsenic in the urine as late as ninety-three days after a single toxic dose. In the case under discussion, the slight renal irritation which developed toward the end cannot with justice be ascribed to arsenic, when one remembers the extreme impairment of skin function. Certainly, if it had been due to arsenic it might have been expected to exist from the first; but such was not the case.

The total arsenic equivalent of the drug given was a little over 2½ grains. As might have been expected from the smallness of the dose, it was only after large quantities of the exfoliating skin were subjected to test that arsenic was found in it.

The blood showed consistently a high polymorphonuclear leukocytosis. This persisted up to within a day before the patient's death, being closely related in degree to the height of the fever. As exfoliation progressed and skin function began correspondingly to suffer, there appeared a remarkable eosinophilia. The latter condition is found in many skin diseases, notably in pemphigus and dermatitis herptiformis, psoriasis and eczema. In all of these, however, the percentage runs usually between 5 per cent. and 15 per cent., being seldom above. At the crest of this patient's illness, the eosin cells formed over 40 per cent. of the total leukocytes. At one time there was transient improvement in the patient's condition. It was then that the eosinophils were most numerous. As the man's resistance lowered, they disappeared from the peripheral blood. During the last three days of his life, the percentage sank to zero. The accompanying chart shows graphically the relation between the fever leukocytosis and eosinophilia.

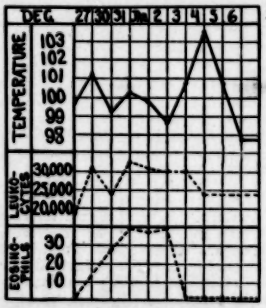

Fig. 3.—Relation between fever, leukocytosis and eosinophilia: Black line, temperature; upper broken line, leukocytes; lower broken line, percentage of eosinophils in the peripheral blood.

1. Severi: Ann. di chim. et di farm. **18**: 33, 1893.
2. Witthaus: Manual of Toxicology, p. 547.
3. Almquist and Welander, quoted by Heffter: Ergebn. d. Physiol. **2**: 115-116, 1903.
4. Wood: Boston M. & S. J. **128**: 414, 1893.

NECROPSY FINDINGS

There was everywhere evidence of atrophy of the subcutaneous fat. The tissues themselves were very dry.

The lungs showed an extensive passive congestion, and, at the right base, was an area of bronchopneumonia.

The heart and liver were soft and pulpy to the touch, and in many places showed extensive areas of fatty degeneration. The spleen was large, very soft and pulpy.

The kidneys were somewhat congested, but did not show either macroscopically or microscopically any definite nephritis. The suprarenals were decreased in size, and the medulla was replaced by a waxy white substance, which no longer took the chromic stain.

The mucosa of the stomach and the intestine was covered by an adherent mucus; chemically, it showed the presence of arsenic. It must be remembered that the bowel is a very important pathway for the excretion of the poison from the body.

Analysis of the liver, brain and skin, as well as of the pericardial fluid, revealed the presence of arsenic.

SUMMARY

1. A fatality followed a therapeutic dose of arsphenamin, the equivalent of less than 3 grains of metallic arsenic.

2. Diarrhea and vomiting were absent during all stages of the intoxication.

3. Nephritis was not a marked feature at any time, and appeared only at the end.

4. There was apparently a decided affinity of the poison for the skin or for the trophic nerves supplying it. From first to last all the toxic symptoms may logically be ascribed to impairment of skin function.

5. Arsenic was persistently present in the urine. This was remarkable in the absence of accompanying renal inflammation.

6. There was a high leukocytosis and eosinophilia, the latter related closely to the patient's resistance. The height of the leukocytosis followed that of the fever.

7. Arsenic was found at necropsy in every tissue in which it was sought.

Tuberculosis in Brazil.—According to the statements of Dr. O. Clark in a recent pamphlet on the need of organizing a Service of School Hygiene in Rio de Janeiro, tuberculosis causes an average of 4,000 deaths every year in the urban section of that capital, in spite of the fact that the climate is most mild, the air most pure, that there is plenty of sunshine; no congestion of population, no factories, and no subways; that there is no poverty, nor any alcohol problem; that the temperature changes but little all the year round, and that there are plenty of gardens and parks and miles of beaches. It is estimated that among all the large cities of the world, Rio de Janeiro has proportionally the largest tuberculosis mortality. Taking as a basis the usual proportion between deaths and cases, the above figures mean that there are at Rio de Janeiro all the time 40,000 cases of open tuberculosis.

THE FUNCTIONS OF THE INTERCOSTAL MUSCLES *

FURTHER OBSERVATIONS

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In two former publications[1] I sought to show how observations on the respiratory movements of the costal margins give us information which enables one to gain definite conceptions about the conformation of the diaphragm. Briefly stated, the intercostal muscles and the diaphragm are antagonists. The minus barometric pressure produced in the pleural cavity during inspiration is due entirely to the excursion of the ribs and the diaphragm. The costal excursion increases the capacity of the thorax in its anteroposterior and transverse diameters, and the phrenic excursion alone increases the longitudinal diameter of the thorax. If all these muscles are activated at the same moment, it is clear that to accomplish an excursion of the ribs and diaphragm, the intercostal muscles and the diaphragm must each reciprocally overcome the minus pressure created by the other. The diaphragm must overcome the minus pressure produced by excursion of the ribs before there can be phrenic excursion, and the intercostals must overcome the minus pressure produced by excursion of the diaphragm before there can be any costal excursion. The lower six intercostal muscles and the diaphragm are also antagonists in controlling the movements of the costal borders.

Unopposed by phrenic action, the intercostal muscles will cause the entire costal margin to move away from the median line and, unopposed by the intercostals, the diaphragm will draw the entire costal margin toward the median line.

If the diaphragm is paralyzed, or its costal attachments are cut away, the outward movement of the costal margin will be greatly exaggerated. If the intercostal muscles are paralyzed, the costal margins will move toward the median line during inspiration.

The intercostal muscles and the diaphragm are antagonists in determining the direction in which the costal margins will move during inspiration, but the direction in which the costal margins may move does not in any way express the intrapleural pressure during inspiration. Nor does the direction in which the costal margins move give expression to the inspiratory excursion of the lung. In other words, there may be adequate (not normal) inspiratory enlargement of the lungs in all three dimensions whether the costal borders move in a median or a lateral direction.

Former interpretations of respiratory movements of the costal borders were based on the experiments and interpretation of Duchenne, which considered only the factor of increased intra-abdominal pressure during descent of the diaphragm as the source for lateral movement of the costal borders.

CONTROL OVER COSTAL MARGINS

I proved by clinical observations and animal experiment that the balance of control over the costal margins depended on the arch of the diaphragm.

In human beings the intercostal muscles have a small margin of superiority over the diaphragm in determining the direction in which the costal margins will move. The more nearly the curve of all, or any part of, the diaphragm approximates a plane, the greater the mechanical advantage will that part of the diaphragm have in control of the costal margin to which it is attached. The anteromedian portion of the diaphragm is less arched than its lateral-posterior portion; consequently less depression of the anteromedian portion is required to give that part of the diaphragm mastery over the costal margin to which it is attached than is required in the case of the lateral-posterior part of the diaphragm.

The phrenic muscle fibers which underlie the pericardial sac are assigned to the costal margins from the subcostal angle to the eighth cartilage on the costal margin. When all the chambers of the heart are enlarged, as in decompensated hearts from myocardial or mitral disease, and when the pericardial sac is enlarged, then the anteromedian or sternocostal part of the diaphragm is depressed, and, as a consequence, the examiner will see a symmetrical narrowing of the subcostal margin during inspiration; but beyond the eighth costal cartilage the costal margins are seen to move away from the median line during inspiration.

The balance of control over the costal margin is so nicely adjusted, and depends so wholly on the curvature of the diaphragm, that any asymmetry of phrenic curve to the two sides of the median line will make itself apparent in asymmetrical movement of the costal margins.

If the left ventricle is enlarged and the right ventricle and right auricle are not greatly enlarged, the left costal margin (to the eighth rib) will move less in an outward direction than the corresponding right side, and the left side may move toward the median line if there is sufficient flattening of the diaphragm. If the right ventricle and right auricle are enlarged, and the left ventricle is not enlarged, then the right costal margin, as far as the eighth rib, will be restricted in its outward movement and may, indeed, move toward the median line with inspiration. So the direction of movement of the subcostal angle and the symmetry, or asymmetry, of movement of the two sides may be employed to interpret the arch of that part of the diaphragm underlying the pericardial sac; and, inferentially, we gain valuable evidence concerning the size of the pericardial sac and also evidences of the size of the left ventricle, right ventricle and right auricle.

SYMMETRY OF MOVEMENT

The symmetry of movement of the entire costal borders gives evidence of the symmetry of the right and left vaults of the diaphragm. Any condition which will increase the arch of one side of the diaphragm, such as enlargement of the liver or subphrenic abscess, will cause the costal margins to move farther laterally, and more promptly, than the costal margin of the other side. When the right thorax, in one instance, was filled with pus which followed the rupture of a large subphrenic abscess through the diaphragm, the right costal margin moved farther away from the median line during inspiration than did the left margin where the lung was perfectly normal.

The movement of the costal borders is a reliable index of the elevation or depression of the arch of the diaphragm.

* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Hoover, C. F.: The Functions of the Diaphragm, Arch. Int. Med. 9: 214 (Aug. 1913); Diagnostic Signs From the Scaleni, ibid. 20: 701 (Nov.) 1917.

When the lung is enlarged by atrophic emphysema or by hypertonus of the bronchiolar musculature, the costal margins are drawn toward the median line during inspiration.

In cases of pneumothorax and empyema, when the under surface of the diaphragm is convexed, the costal margin moves away from the median line during inspiration. When air is released, or fluid is aspirated so that the leaf of the diaphragm is no longer convex on its under surface, the costal margin will move toward the median line when the diaphragm is activated, although under such conditions there can be no phrenic excursion.

The movement of the costal margin is determined by the activation and arch of the diaphragm and is not dependent on the excursion of the diaphragm.

The failure to differentiate between evidences of excursion and evidences of activation of the phrenic leaf, and the failure to appreciate the mechanical significance of the diaphragmatic arch have led to misinterpretation of the action of the diaphragm.

Study of the respiratory movements of the costal margins gives valuable information concerning the conformation of the entire diaphragm, and it also enables us to recognize any disturbance of balance between the intercostals and diaphragm when the existing impairment is on the part of the intercostal muscles.

In former years, when evidences of excursion were wanting, the diaphragm was supposed to be paralyzed, and no significance was attached to the direction or degree of excursion of the costal margins.

The excursion of the abdominal wall is a measure of the excursion of the diaphragm, but the excursion of the costal margins simply indicates the resultant of the two forces which are evidenced in the direction and degree of excursion of the costal margin. These two forces are derived from phrenic and intercostal muscle activation and must not be confused with evidences of excursion of the diaphragm.

PHRENIC AND INTERCOSTAL MUSCLES

The more nearly the phrenic muscle approximates a plane, the greater mechanical advantage will it have in procuring mastery of the costal border; and the more curved the plane of the diaphragm, the less evidence will there be of its activation. It matters not whether the diaphragm is convexed downward, as in empyema and pneumothorax, or convexed upward, as in hepatic enlargement or subphrenic abscess. Although the diaphragm moves upward (in some cases of pneumothorax and empyema) during inspiration, the costal margins of the affected side will move outward during inspiration. This experience, which can be seen plainly with the fluoroscope in patients who have a pneumothorax under positive pressure, very definitely disposes of the old interpretation of inspiratory spreading of the hypochondria, which was based on Duchenne's experiments.

Movement of the ribs and the degree and direction of movement of the costal borders give valuable aid in detecting evidences of paresis of intercostal muscles. The costal excursion very faithfully mirrors the excursion of the underlying lung. This is of great importance in physical examinations, for it enables the examiner to detect regional modifications of pulmonary excursion.

By physical examination the physician should form very definite ideas of the size, density and extensibility of the lungs. Indeed (with the exception of a few adventitious signs), all of our methods of pulmonary examination are directed toward an estimate of these three attributes of the lung. Of the three attributes, namely, size, density and extensibility, the last is the most exquisitely responsive to pathologic changes. Extensibility is the first physical attribute of the lung which is modified in all diseases of the bronchi, lung tissue and the pleurae. It requires only a few moments to palpate the respiratory excursion of all the ribs and determine the character of excursion of the costal margins. When these observations are critically performed, the examiner will have formed a definite conception of the conformation of the diaphragm, and also a clear idea of the extensibility of the upper and lower lobes of the lungs.

Although paralysis of the intercostal muscles will diminish the vital capacity of the lungs in direct proportion to the extent of the lesion, all paralyses are well tolerated excepting one combination, and that is a paralysis of the upper half of the intercostals when the remaining lower half of the intercostal muscles are active.

REPORT OF CASES

Case 1.—A plump, healthy looking boy, aged 2 years, was brought to the hospital on account of what seemed to be paroxysms of suffocation. Stenosis of the upper air passages was suspected.

The child lay very comfortably on his back in bed and exhibited no signs of distress unless he was engaged in play, and laughed or cried. Any activity which was attended with an increase of respiration was attended with pronounced cyanosis. Dyspnea and cyanosis were so pronounced it frequently seemed that suffocation was imminent.

Cyanosis and respiratory discomfort increased in a vicious cycle as any incentive to deep breathing was employed. The more deeply and rapidly the child tried to breathe, the worse it breathed. There was no prolongation of either expiratory or inspiratory phase. It was also observed that during these violent inspiratory efforts, the upper thorax was violently retracted and the lower thorax was violently distended, with exaggerated spreading of the hypochondria and protrusion of the abdomen. There was a genuine see-saw between the upper and lower thorax. The scaleni were intact, as was evidenced by fixation of the first rib of each side and a want of descent of the manubrium during inspiration.

During an inspiratory effort the ribs on both sides, from the second to the sixth inclusive, were strongly retracted. The seventh rib (on both sides) was stationary. From the eighth rib to the twelfth (inclusive) there was an exaggerated excursion in a normal direction.

It was clearly evident in this case that there was a marked diminution in volume of the upper lung and exaggerated distension of the lower lung during a violent inspiratory effort; the lower lung was, therefore, distended in part by air which was displaced from the upper lung during inspiration; so the patient was ventilating his lower lung in large part by alveolar air from the upper lung, and during expiration, alveolar air from the lower lung was driven into the upper lung. There was a reciprocal expansion and contraction between the upper and lower lung. During strong inspiratory efforts, alveolar air was shunted back and forth between the upper and lower portions of both lungs. Tranquil breathing was attended with adequate ventilation, but forced breathing developed a vicious reciprocal contraction and expansion between the upper and lower parts of both lungs, which caused intense air hunger and cyanosis.

There were no physical signs to indicate any disease of the bronchial tract, or lung parenchyma or pleurae. A roentgenogram revealed marked signs of tuberculous disease

of the bodies of the upper six dorsal vertebrae, in other respects revealing a perfectly normal thorax.

There were no other neurologic signs obtainable which would indicate any disease of the spinal cord or the intercostal nerves. The respiratory distress and inspiratory retraction of the second to the sixth ribs (inclusive), associated with the disease of the vertebrae revealed by the roentgen ray, seemed, however, to justify a diagnosis of motor paralysis of the intercostal muscles, which normally accomplish the ventilation of the upper parts of the lungs.

The vicious cycle of rebreathing established between the upper and lower lung was due to the flexibility of the child's ribs, as well as to the motor paresis of the upper intercostal muscles. Had the same extent of motor paralysis occurred in an older person, with more resistant ribs, there would probably have been little or no respiratory distress. This is the only occasion in which I have seen paralysis of the upper intercostals when the lower intercostals were active, and is the only intercostal paralysis which will cause reciprocal rebreathing between two regions of the lungs. I have frequently seen paralysis of the lower intercostal muscles when the upper muscles were intact and, on one occasion, motor paralysis of all the intercostal muscles with scaleni and diaphragm intact; but the patients had no respiratory distress, because there was no rebreathing between different parts of the lung.

Paralysis of all intercostal muscles on one side is also well tolerated.

CASE 2.—A girl, aged about 6 years, was brought to the hospital directly after she had fallen to the ground from a ladder on which she was climbing. The resident physician palpated what he interpreted as the body of the third cervical vertebra projecting into the posterior pharyngeal wall. The projecting mass was pushed back into position. It was then discovered that the child had motor paralysis of the left upper and lower extremities, and it was also observed that the left side of the thorax did not move with respiration. A lumbar puncture revealed a large amount of free blood in the subarachnoid space. There was complete paralysis of all the intercostals of the left side of the thorax, and there was no demonstrable evidence of any activation or excursion of the left side of the diaphragm. All the pulmonary ventilation was accomplished by the intercostals and diaphragm of the right side.

The child was not cyanotic, she had no air hunger, and there was no inspiratory retraction of the left thorax. The entire left thorax was completely immobilized. There must have been some ventilation of the left lung because there would certainly have been cyanosis at least, had all the blood passing through the left pulmonary veins been unrespired. A very moderate increase in respiratory excursion of the normal right lung would have compensated for an increase of carbon dioxid contributed to the aortic blood by unrespired blood from the left lung; but superventilation of the right lung could not prevent cyanosis from appearing under such circumstances. We would have seen the same degree of cyanosis that appears in fibrinous pneumonia of the entire left lung. Were there no ventilation of the left lung under such conditions as presented in this child, then the only area for the escape of carbon dioxid and absorption of oxygen for the left lung would have been the cross section of the left bronchus.

When we consider the estimated area of the total respiratory membrane of an adult lung to be 90 square meters, it is apparent that although a bronchus to a lung may be open, it offers a negligible area for transpiration of gases. In the case of this child, with all the intercostal muscles and diaphragm of the left side paralyzed, the only manner in which anoxemia could have been prevented would have been through some respiratory excursion of the mediastinum, for there certainly was no respiratory excursion in a longitudinal or anteroposterior diameter. There must have been some respiratory movement in the third dimension. With the disturbance of equilibrium between the right and left pleural cavities which attended intercostal and pleural excursion of the right side, the mediastinal structures moved toward the right. In this manner the transverse diameter of the left pleural cavity was enlarged during inspiration and diminished during expiration. There was therefore no rebreathing between any two portions of the lung.

To summarize, paralysis of all the intercostal muscles, of both sides, or of one side, or the lower half of both sides, or the lower half of one side, produces no respiratory distress nor cyanosis when the patient is at rest.

Paralysis of the upper half of the intercostals of both sides, however, produces severe respiratory distress when the ribs are sufficiently flexible to admit of reciprocal expansion and contraction between the upper and lower parts of the lungs so as to cause rebreathing between the upper and lower lung.

Although this manner of intercostal paralysis is the only kind which will per se produce suffocative symptoms, intercostal paralysis of a moderate extent will diminish the vital capacity of the lung.

CASE 3.—A man suffering from syringomyelia of the cervical and dorsal cord had very moderate emphysema which was not sufficient to cause flattening of the diaphragm; but the pulmonary volume was enlarged so that the lower border of the lung stood one intercostal space lower than is normally found. The striking feature about this patient was the very small margin of cardiorespiratory reserve, which was disproportionately small for the very moderate emphysema. Physical examination and the roentgen ray both failed to detect any signs of lung or heart disease which could in any way explain the small vital capacity of the lung, which was only 1,100 c.c.

Pulmonary emphysema which would reduce the vital capacity to so small an amount must be a severe emphysema, and this man did not have severe emphysema, nor was there any evidence of cardiac enlargement, or stasis in the pulmonary circulation, or other disease of the bronchi, or lung parenchyma or pleurae. The striking disparity between the moderate emphysema and great reduction in the vital capacity could be accounted for only by evidences of paralysis of the intercostal muscles from the third to the seventh rib (inclusive) of the left side. The left costal border, from the subcostal angle to the eighth rib, was drawn toward the median line during inspiration. The left costal margin below the eighth rib and the entire right costal margin moved laterally during inspiration. When the ribs of the left side were palpated successively from above downward, all could be felt to move normally excepting the fourth to the eighth ribs, which, on palpation, revealed inspiratory retraction.

There was no evidence of disease of the underlying lung, and there was not merely a want of normal excursion of these five ribs, but there was a genuine retraction of the ribs during inspiration.

The retraction of the costal border of the left side, from the angle to the eighth costal cartilage, was explained by the normal diaphragm in this region being unopposed by intercostal muscles. Further confirmation of this interpretation of the small vital capacity was found in evidences of marked paresis of the abdominal muscles of the left side. During expiration the abdominal wall was seen to be rotated on a longitudinal axis; the median line was drawn toward the right side during forced expiration, and the umbilicus moved upward and toward the right when the patient coughed.

During the act of coughing, one could palpate an equal bursting tension over the left and right sides of the abdomen; but the abdominal wall to the left of the median line was clearly seen to be protruded, while the right side was retracted. To the left of the median line the abdominal wall was passively distended; but to the right of the median line the abdominal wall was actively contracted, when the patient coughed or made a forced expiration.

An analysis of this patient's peculiar respiratory limitations and movements became quite clear when the movements of the costal margin were employed to study the

balance of power between the diaphragm and the intercostal muscles; but aside from this point of view, his respiratory movements became a hopeless tangle.

INTERCOSTAL MUSCLES AND DIAPHRAGM

In several cases of syphilis of the spinal cord it has been possible to demonstrate paralysis of several groups of intercostal muscles by observing the respiratory movements of the entire costal margin. When the diaphragm is unopposed by intercostal muscular action, the costal border will be drawn toward the median line during inspiration; but the retraction of the costal border does not prove that there is impaired muscular power of the intercostal muscles—the intercostal muscles may be normal and the costal margin be retracted because the flattening of that particular part of the diaphragm gives the phrenic muscle mastery over the costal end. When retraction of the costal margin is an evidence of paresis or paralysis of the intercostal muscle, then the involved rib will be seen to retract throughout its course, whereas, the anterior end of the rib will be retracted, and the rib in its course will be normally elevated, when flattening of the phrenic arch is responsible for retraction of the costal border.

In studying the respiratory excursion of the ribs, one must differentiate between the significance of excursion of the costal ends, namely, the costal border, and excursion of the arcs of the ribs. The direction of the excursion of the ends of the ribs (costal border) is quite independent of excursion of the diaphragm and excursion of the arc of the rib. The costal border (rib ends) will move either toward the median line, or laterally, according as the pull of the diaphragm or of the intercostal muscle may have the mastery of the ends of the ribs. When the intercostal muscles are paretic or paralyzed, the costal border formed by the ends of the affected ribs will be drawn toward the median line during inspiration, and the arc of the affected ribs will also be retracted during inspiration.

When the diaphragm is flattened and the intercostal muscles are normally activated, then the costal border will be drawn toward the median line during inspiration; but the course of the rib will move in the normal "bucket handle" arc.

Careful study of the respiratory excursions of the arcs of the ribs and of the costal border gives very valuable information on the innervation of the diaphragm and the intercostal muscles. By this study we are also enabled to visualize the conformation of the leaves of the diaphragm, and by such observations we also gain valuable information about the extensibility of the lung.

CONCLUSION

Costal movements accurately mirror the movements of the underlying lung.

When the respiratory excursions of the thorax are studied in this manner, the lung and its bounding walls take on an entirely new significance.

The lung will be appreciated as a very lively organ, which has a motility quite different from the popular conception of an elastic bag which is alternately expanded and contracted en masse in obedience to changes of barometric pressure within the pleural cavity.

1903 East Seventy-Fifth Street.

ABSTRACT OF DISCUSSION

Dr. Henry Sewall, Denver: Since Hutchinson, in 1834, showed that the lung activity could be separated into three cycles, residual, complemental and tidal air, we have learned nothing. Dr. Hoover did not speak of the relation of the blood flow through the lungs. That is a matter of supreme importance, of course. In one subject the blood goes through in two or three times the volume that it does in another subject, and every time there is a cry or a deep respiration, that blood flow is accelerated or retarded. When a person changes his position there is a tremendous gravimentary pull on that blood, and in some people that blood does not get back to the heart, and you may think that blood does not go through the lungs. Of course, that is not just right—the blood is retarded. Very often in going about in an automobile, I feel as though I were going to faint. I know that is due to the blood being retarded and I can correct it by voluntary contraction of the abdominal muscles; I pump that blood up into my brain just as you would pump the blood into a tube. There are peculiar relations which the doctor spoke of—of one part of the lung pumping blood into another part. This is a very interesting fact. You can demonstrate certain practical conclusions by the use of this method voluntarily. Hold your breath as long as you can, say for one minute. Have your glottis closed, and when you cannot hold the breath any longer, contract your chest and expand your abdomen and you churn the air back and forth in your lungs and you can hold it for a minute and a half. Remember that if you get caught out in the surf. Just as the surgeons are waking up to the fact that there is a field of thoracic surgery, the clinicians must wake up to the fact that there are mechanics of respiration which they have always avoided because they lack mechanical training. It is just as important as the study of the signs of appendicitis.

Dr. Charles L. Minor, Asheville, N. C.: For a number of years I have believed that the presence of a very small focus in the upper portion of the lung will manifest itself as clearly by limitation of the base as in any other way. I have given a great deal of study to the isthmus, and there is nothing more useful than an otherwise unexplained limitation of the motion of the base. That is extremely more valuable than the fluoroscope. The fluoroscope shows the advance and the retardation of the diaphragm; it does not show advance or retardation in the complemental space. Remtree's stethometer measures the motion of the second, third or fourth rib. The diagnosis of tuberculosis depends on the little things and summation of the different points.

Dr. Charles F. Hoover, Cleveland: The point Dr. Sewall mentioned—holding the breath—is somewhat aside from the subject matter which I presented; but inasmuch as Dr. Sewall brought it up, I will mention that the holding of the breath is pretty difficult to explain. For instance, if anyone of us would take a deep inspiration, if we superventilate our lungs for probably four or five inspirations and then take a deep inspiration and then close the glottis, we cannot hold the breath for more than about a minute. Then we exhale, and we find that the concentration of the CO_2 in the exhaled air will be about 6.23. Now, however, if we ventilate our lungs with pure oxygen, we cannot hold our breath any longer because of the rise of the partial pressure of CO_2 in the aortic blood. This is not due to a want of oxygen, but to the fact that the elevation of CO_2 in the aortic blood has compelled an inspiratory impulse. Now, if we ventilate the lung several times and take a deep inspiration of pure oxygen, we will find that we can hold the breath for three minutes. Then if we explore the air, instead of the 6.23 we will have 9.23 CO_2. So that according to all our teaching of inspiration a man must have in his aortic blood a concentration of CO_2 which balances the alveolar air, and yet you can hold your breath very comfortably provided you have an adequate amount of oxygen. If you reduce the oxygen, you cannot hold it so much. There is no explanation of the tolerance of CO_2 in the presence of oxygen, and the intolerance of CO_2 in the presence of diminished oxygen. I simply want to show that we have not by any means explained what we term shortness of breath. It is an extremely difficult thing to explain.

STUDIES ON MALARIA CONTROL

IX. EFFECTIVE AND PRACTICAL TREATMENT OF MALARIA TO DISINFECT INFECTED PERSONS AND TO PREVENT RELAPSE *

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NEW ORLEANS

When a physician is called on to treat a case of malaria, usually the chief object he has in view is to relieve all clinical symptoms. The disinfection of the patient and the prevention of relapse receive secondary consideration, if any. There is great variation in the treatment of clinical cases of malaria, and still greater variation in the treatment for the purpose of disinfecting the patient. Disinfection is of greater importance than it is generally considered to be, because of the fact that if not disinfected the patient is likely to have latent malaria or to relapse with more or less harmful effect, and because of the further fact that during all the time he is a potential source of infection to others.

In a study of the frequency of malaria relapse made on 3,815 persons in Sunflower County, Mississippi, during 1918, the information obtained showed that between 50.77 and 68.86 per cent. of all persons who had attacks of malaria during the year had relapses and not new infections. It is not uncommon for persons to have from one to several attacks of malaria every year, for a period of two or three years. There are plenty of instances in which the possibility of reinfection was entirely eliminated, showing that they were relapses and not new infections.

The importance of disinfecting infected persons has not received as much consideration by practitioners as it deserves. Using the data that have been obtained in a study of malaria control in the Mississippi delta during the past three years, I have been able to estimate with a fair degree of accuracy the reduction in the prevalence of malaria that would take place if all physicians disinfected all the cases they treat. It was shown that malaria would be reduced approximately 90 per cent. in ten years' time by this means alone.[1] Every case of malaria means that the patient will continue as a potential source of infection until disinfected, and every malaria patient disinfected means the destruction of one or more sources of infection.

Malaria is one of the diseases in which the clinical symptoms are relieved a long time in advance of the disappearance of the specific infectious agent. No high degree of effective immunity is conferred by an attack of the disease in the majority of instances. Whenever sufficient treatment is given to reduce the number of parasites sufficiently, the symptoms cease, but the infection continues. Small numbers of parasites may remain in favorable locations in the tissues of the body, and probably continue to reproduce. Later, when conditions become more favorable, they may, and often do, give rise to a return of clinical symptoms, or relapse.

Though blood examination demonstrates the presence of parasites in practically all cases of clinical malaria, and in many instances of persons who are infected but have no recognized clinical symptoms at the time, it fails to demonstrate their presence in many persons who have smaller numbers but are still infected. The number of parasites may be so small that no practical examination of the blood would demonstrate their presence. As long as the patient has one viable parasite in him, he remains infected. Treatment for the purpose of disinfection is not effective, therefore, until every parasite is destroyed. When this is accomplished, no relapse occurs, nor is the patient a source of infection to others. Treatment which will destroy every parasite, and which is practical at the same time, is my subject here.

The disappearance of clinical symptoms and of parasites from the peripheral circulation cannot be depended on, therefore, to show when disinfection has been accomplished. In many instances, patients carry the infection for months, sometimes as long as a year, or even longer, without showing any clinical symptoms whatever. Then something happens that reduces the effectiveness of the means by which sufficient resistance has been maintained to retard the multiplication of parasites, and clinical symptoms of malaria develop. Such things, for instance, as sudden chilling of the surface of the body, getting wet, eating large quantities of indigestible food, the shock of surgical operations, or injuries, are frequently sufficient to precipitate attacks in persons who are infected but who have been able to resist the disease sufficiently to prevent clinical symptoms.

THE DURATION OF PROPER QUININ TREATMENT

The duration of proper quinin treatment is the only reliable guide as to when disinfection has been accomplished. Since the disappearance of clinical symptoms and of parasites in the peripheral circulation, presence of which affords the basis for a diagnosis of malaria, cannot be depended on as a guide as to when disinfection has been accomplished, we must rely on methods of treatment which have been demonstrated by experience to prevent the occurrence of relapse. Quinin is the only drug known which destroys malaria parasites and is capable of disinfecting. It is, fortunately, a very perfect specific, and I believe it can confidently be said that when properly used it will disinfect any patient. My opinion is that there are no exceptions. Perhaps the amount of quinin and the duration of administration required may, in exceptional cases, be much greater than what the average patient requires; but there surely is a dose and a duration that would be effective in every instance. Failure simply means that proper doses of quinin have not been administered or that there has not been proper duration of treatment, and not that the patient cannot be disinfected by treatment with quinin.

AVOIDANCE OF INCONVENIENCE AND DISCOMFORT

Practical treatment must be convenient and must not produce great discomfort. Even after the acute symptoms of malaria have been relieved, the patient must be given quinin for a considerable length of time to make reasonably certain that he is disinfected. On account of the fact that the treatment must be so long continued, long, in fact, after the patient thinks he is

* From the Department of Experimental Medicine, Tulane Medical College.
* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.
* This is one of a series of papers to be published, based largely or entirely on malaria control work conducted jointly by the International Health Board and the Mississippi State Board of Health.
1. Bass, C. C.: Studies on Malaria Control, V. The Importance of Disinfecting All Cases Treated as a Factor in Malaria Control in a Locality of Great Prevalence, South. M. J., to be published.

well, the quinin must be given in a convenient form. During the prolonged treatment the patient is usually up and about at his usual occupation, and any treatment that puts him to considerable inconvenience would be much less likely to be continued than one that did not. Quinin is a drug that is slowly absorbed and slowly eliminated, and it is not necessary, therefore, that it be given at frequent intervals. For the purpose of disinfection, one dose a day is just as effective as any larger number of doses, and it is much more convenient to take one dose daily than a larger number. Generally speaking, it is much more convenient to take it at night before retiring than at any other time of day.

If the treatment produces great discomfort it is also not as likely to be carried out as if it did not. When given hypodermically, great discomfort is produced and, in practice, few patients are ever disinfected when this method of administration is prescribed. Sometimes quinin is given by mouth in acid solution. This is one of the most nauseating doses, and any physician who has been in the habit of prescribing quinin in this form, or who contemplates doing so in the future, should take it for a while himself. He will then be better able to decide whether or not to prescribe its use in this fashion. It is much better to give it in the form of tablets, for those who can swallow tablets, and in the more or less tasteless form of quinin in aromatic syrup of yerba santa for young children. The discomfort caused by quinin injection and by taking it in acid solution by the mouth is often a cause of abandoning the treatment before the patient is disinfected.

Quinin causes considerable discomfort, such as tinnitus, urticaria and nerve irritation, in a great many persons. Susceptibility to these unpleasant effects varies greatly with different persons. Some are rendered quite uncomfortable by even small doses, while others may take considerably larger doses without discomfort. Fortunately, there is, in the great majority of instances, no great unpleasantness produced by the amount necessary for disinfection. It is very important that the necessary dose should not be greatly exceeded because of the resulting discomfort. Otherwise, the treatment is much more likely to be abandoned before the desired results have been accomplished. There is no other specific remedy for malaria and, therefore, no other treatment to choose. Those who are affected unpleasantly by it are unfortunate, but still their only specific remedy is quinin. The sooner this fact is learned and appreciated by the medical profession, as well as the laity, the better it will be for malaria sufferers.

SPECTACULAR METHODS AND UNUSUAL SALTS

Since the treatment must be kept up for a considerable length of time to disinfect, and since the success depends very much on the patient's confidence and cooperation, spectacular methods and special salts and preparations of quinin should not be used, even if they should be as effective, dose for dose, which they often are not. So far as I have been able to learn from experimental studies, and from observation of treatment of those who have malaria, in a group of more than 40,000 persons living in a heavily infected section, there is no salt of quinin any more effective in disinfecting a patient than ordinary sulphate, and there is no method of administration that is as effective or practical for this purpose as administration by mouth.

During 1916 and 1917, those who were found to have malaria among 31,459 persons examined in Bolivar County, Mississippi, were furnished quinin in different forms and in different size doses, to be taken for variable lengths of time in different groups. A blood examination was made of these persons subsequently, to determine the results of the different methods of treatment. From the data obtained, it appears that 10 grains of quinin a day for a period of four weeks disinfects about 60 per cent., and that 10 grains a day for eight weeks disinfects about 90 per cent. There were some instances of relapse in the case of persons who took the full eight weeks treatment faithfully.

It was also found that patients take 10 grains of quinin daily better, and more systematically, than they will take larger doses, such, for instance, as 20 grains daily. They will not take the large dose so well because of the discomfort produced, including, especially, tinnitus and dizziness, which often occur in laborers and in people under the influence of quinin working out in the heat of the sun.

As a result of this experience, we have adopted 10 grains of quinin daily, to be taken, preferably, before retiring, for a period of eight weeks, as the minimum dose that can be depended on to disinfect. (Children should be given a proper proportionate dose.) Patients thought likely to be especially resistant should be given a somewhat longer course of treatment. If judgment and care are used, most of the patients who would fall in this group can be found by giving attention to the history, which usually tells of previous relapses. Patients who give a history of previous relapses should be put on longer than eight weeks treatment.

SUMMARY

Disinfection of the patient has not received the consideration that it deserves in the treatment of malaria.

The disappearance of clinical symptoms and of demonstrable parasites in the blood cannot serve as a reliable guide as to when disinfection has been accomplished. Nor can any other known method of examination determine when the infection is eliminated. The most dependable guide at our command is the duration of a treatment that experience has shown to be effective.

Quinin, in sufficient doses for a sufficient period of time, is effective in all cases. I believe that there are no exceptions to this statement. Instances in which the treatment that is successful in average cases fails to disinfect are examples, not of the failure of quinin to disinfect, but simply of the failure of quinin in that particular dose and for that particular length of time. If the treatment be continued for a sufficient length of time, it always succeeds, even in these exceptional cases.

The treatment, to be practical, and to be carried out by the patient, must not cause great discomfort or inconvenience. One dose at night is usually more convenient than a larger number of smaller doses, and it is equally effective. Less discomfort is produced also.

The treatment recommended, one to disinfect infected persons and to prevent relapse, is 10 grains of quinin sulphate at night, before retiring, for a period of eight weeks. When there is good reason

to think a given patient will be more difficult to disinfect than the average one, the treatment should be continued considerably longer than eight weeks.

NOTE.—What has been said refers to the treatment of cases without acute symptoms, or after active symptoms have been relieved. Active clinical symptoms are relieved in practically all cases by three doses of 10 grains of quinin, during each day, for three or four days.

ABSTRACT OF DISCUSSION

DR. C. S. WILLIAMSON, Chicago: We do not see very much malaria in Chicago, and yet when we do see it, it presents some interesting problems. During the past five years three cases have come under my care under almost identical conditions. The patients were young men; the diseases came on after exposure to cold in February, and the diagnosis in each case was lobar pneumonia. None of these patients had been out of Chicago for many months. None of them knew that they had had malaria before; the diagnosis was confirmed by blood examination. The symptoms were such as to lead inevitably to a diagnosis of lobar pneumonia. In one case the patient was given quinin sulphate for five months in doses of about 30 grains a day, followed by an acid solution, and at the end of that time there was a relapse. The patient had not left Chicago.

Will Dr. Bass tell us whether he believes that the temperature of Chicago might reawaken an old malarial infection or whether there is some particular strain of the parasite which must be accounted for. These cases impressed themselves on my mind because it seemed to be almost impossible to have malaria in the cold winter. One patient was working on a bridge, and you would naturally think of pneumonia and not of malaria and mosquitoes.

DR. CHARLES C. BASS, New Orleans: I do not think that we know just how exposure to cold and other influences that lower the vitality of the individual will cause relapses. It is a most common experience where there is much malaria that, given a group of men many of whom are infected and who are getting along well, if it rains and many of them get wet, sudden chilling of the surface of the body is followed in three or four days by chills and fever, although the patients had not had chills and fever before; but this sudden chilling of the body seems to affect them. Another observation that most of us who have studied malaria have made is that a constant even temperature, when there is little variation between the noon to night temperature, not as many malaria relapses are noted as during the early season of the year and later in the fall when there is great variation in the extremes of temperature. It seems reasonable to suppose that this is one of the many things that may lower the general vitality of the individual and in some way interfere with the resistance by which he holds back or prevents relapse. The shock of a surgical operation may do the same thing. Perhaps, however, when we know more about the immunity processes by which individuals are able to prevent relapses and eliminate the relapses without treatment the relapses will be fewer.

Is Your Community Fit?—A nation-wide campaign for the prevention of venereal diseases has been organized. Have you consulted your health officer on the part your city should play in this important work? Is your community planning to take advantage of the recent federal enactment and appropriation for the control of venereal diseases throughout the United States? Has an ordinance been passed which will enable your health department to take up this matter in an effective manner? Proper reporting of dangerous sources of infection and their adequate treatment and control beyond the contagious stages is essential. The establishment of places where infected persons can be given expert treatment and advice will greatly aid in limiting the spread of these diseases which are so disastrous to mankind.—*Pub. Health Rep.*, April 25, 1919.

DESIRABILITY OF PREVENTING STERILIZATION IN YOUNG WOMEN

WHEN OPERATING FOR TUBERCULOUS PERITONITIS *

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Tuberculous peritonitis generally occurs in the young, principally in women, although it may affect either sex. After considerable experience with abdominal operations, I have found that tuberculous peritonitis is usually cured by a celiotomy. The simple opening of the abdomen without anything else being done, nothing being removed and no irrigation being instituted, has sometimes resulted in a cure. At other times, complications have been found which had to be remedied. Often the operation was performed for pus tubes, which were very properly removed on account of mixed infection.

It has become a custom with some surgeons when operating for tuberculous peritonitis to remove the tubes whether there was mixed infection or not, simply in order to close an avenue for the entrance of tubercle bacilli, which were supposed to be poured out from the end of the tube into the peritoneal cavity. I have protested against this practice for many years, because the tubercles in the peritoneum are all absorbed in the course of time, and it is my belief that the tubercles on the tubes and uterus would likewise be absorbed.

It has been asserted that in operating for appendicitis, it is often found that the trouble is of tuberculous origin. In that case I always remove the appendix, and I should also remove the tubes if the nidus of the disease seems to be there. It is at times very difficult to tell where the original infection was, or where the disease in the peritoneum started. There may be big masses of tuberculous deposits, even in the omentum, some of them solid and from 2 to 3 inches in diameter, but I never remove them nor do I take any other action. They all disappear in a remarkable manner by simple opening of the abdomen. I remove the appendix in all these cases, because the appendix is a dangerous organ to leave behind. As the result of the tuberculous infection, adhesions, twisting, and kinking of the appendix often occur, which in the future are liable to cause an acute inflammation of this organ even after all tuberculous deposits have disappeared. In the case of the tubes this danger does not exist. The patients are nearly all young women, perhaps unmarried, or married only a short time, and to remove the tubes and thus deprive them of the opportunity of motherhood I consider a bad practice.

ORIGIN OF TUBERCLES IN THE PERITONEUM

As to the origin of the tubercles in the peritoneum, on the appendix and the tubes, they are brought in and are deposited there from the lymph channels. Some of them may pass from within the intestine by a process of diapedesis into the peritoneal cavity. Most of them are probably absorbed into the circulation and are deposited. These tubercles may differ from those usually affecting the lungs. They may be, as many

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventieth Annual Session of the American Medical Association, Atlantic City, June, 1919.

think, of the bovine kind, such as are also supposed generally to affect the joints of children and to be due to drinking milk from tuberculous cows.

This tuberculous trouble of the peritoneum seldom comes from the vagina and uterus, and is not poured out of the end of the tube. In fact, such a case has never been demonstrated. I have curetted several hundred patients. I have had them all examined microscopically, and in only one case was there a tuberculous condition on the mucous membrane of the uterus, and that was in a woman, aged 55. I have also seen only one case of tuberculosis in the vagina.

SYSTEMIC ORIGIN OF TUBERCULOUS PERITONITIS

One point I want to make is that tuberculous peritonitis is of systemic origin, and does not come from the outside through the tubes; hence, there is no occasion to remove and close them.

Another point I want to bring out is that, whereas there are thousands and thousands of tubercles deposited in the peritoneum in large bunches, even on the omentum, forming hard, firm tumors from 3 to 4 inches in diameter, all these are rapidly absorbed after a simple operation without any apparent trouble. If nature takes care of all the tubercles in the peritoneum and omentum, the dozen or two that are on the uterus, or on the peritoneal covering of the fallopian tubes, will also be taken care of, and the woman will be restored to perfect health with all her generative organs in good condition.

INDICATIONS FOR THE REMOVAL OF THE TUBES

The only case in which the removal of the tubes is justifiable is when another kind of infection has also taken place in the tubes, and they have been closed either before or after the tuberculous deposit in the peritoneum has taken place. Then we are obliged to remove the pus tube completely in many cases, and there is no reason why we should not do that even though the patient has a tuberculous peritonitis. But even in these cases, we sometimes merely resect the tube or some part of it, with the view of possible pregnancy in the future, and we can do this also in some cases with the disease under consideration.

REPORT OF CASE

Mrs. P. T., aged 28, operated on by me, July 27, 1916, for tuberculous peritonitis, made an excellent recovery, gained rapidly in flesh and blood, and menstruated normally until April 13, 1918. September 1, she felt life, and was delivered, Jan. 25, 1919, by Dr. A. R. Moon. She had a retroverted adherent uterus, and had had no children. When operating for this condition I found she also had tuberculous peritonitis.

I had one other case in which I operated, July 16, 1918, and in which the patient became pregnant in January, but aborted.

These cases show that after a conservative operation for tuberculous peritonitis, women may become pregnant; hence, no woman in the child-bearing period should be sterilized unless there are other causes than tubercles in the peritoneum.

DIFFICULTY OF THE DIAGNOSIS

The difficulty of making the diagnosis is well known. I often find symptoms and indications that there might be such trouble, and when operating find some other kind of infection in the tubes. In other cases in which I simply operate for displacements and adhesions, I suddenly run across a tuberculous peritonitis.

AUTHOR'S METHOD OF OPERATION

All physicians differ in their technic more or less, and I do not know that the differences are very important. In my earlier cases I washed out the peritoneum with a 1:10,000 mercuric chlorid solution. A quart of the solution is poured in, the opening is closed with the hand, and the body is shaken so that the fluid comes in contact with every part of the peritoneum. I think this irritates and stimulates the peritoneum—probably produces phagocytosis. I do not know whether the mercuric chlorid does any good, but I know it does no harm, as I empty the peritoneum and then put in a saline solution—gallons and gallons of it—and wash the peritoneum out thoroughly so as to be sure that there is no mercuric chlorid solution left behind to produce poisoning. I then sew up the abdomen with No. 2 plain catgut in layers, closing first the peritoneum, then the muscle, and then the fascia with a running suture. I never sew up the skin. I use sterile adhesive plaster, and the wound generally heals promptly. Formerly, I used silkworm-gut or silk sutures, but as these act as a drain, and in the tract of each suture a deposit of tubercles made its appearance, and each stitch hole showed a dark red spot as seen in healing or healed tuberculous sinuses, I stopped this method of closure. Drainage of the wound is not considered, because it first of all does not drain, and secondly, is liable to result in the development of fistulas and ulceration of the bowel.

CONCLUSION

If nature will remove the myriads of tubercles in the peritoneum in whatever part they may be, nature will also remove the few that can be found in the tubes, and the latter need not be removed on that account, and the women be thus needlessly sterilized.

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ABSTRACT OF DISCUSSION

DR. J. SHELTON HORSLEY, Richmond, Va.: Not many years ago every surgeon had his own particular pet method of treating tuberculous peritonitis. One would let the sunlight in, another put in drainage tubes and still another would have his own mixture of dusting powder. The peculiar part of the matter is that nearly all the patients got well. This is not due to the particular method used but to the fact that each man was unconsciously working on the principle of producing hyperemia, which is the enemy of tuberculosis. When Dr. Carstens opens the abdomen and removes the appendix or any other organ he induces hyperemia, and this conduces to the recovery of the patient. As to the question of drainage; that is important. In ordinary peritonitis we did not drain in a mechanical way; every abscess in the peritoneal cavity was drained uphill and patients get well from appendiceal abscess drained uphill as readily as do those drained by the culdesac, because the drainage tube acts as an irritant, promotes hyperemia and that assists in curing the tuberculosis. Mutilation of the patient by taking out the tubes because she has tuberculosis does not remove the pathology.

DR. J. H. CARSTENS, Detroit: All I want to plead against is this everlasting removal of tubes and the sterilization of women for every little measly thing that might be the trouble. I decidedly object to that as it is bad practice. When a person has tuberculosis of the lungs or some other organ of the body, you do not remove those organs; you treat the patient systemically. Why should you not do that in this kind of a case? The bacilli are killed and then disappear.

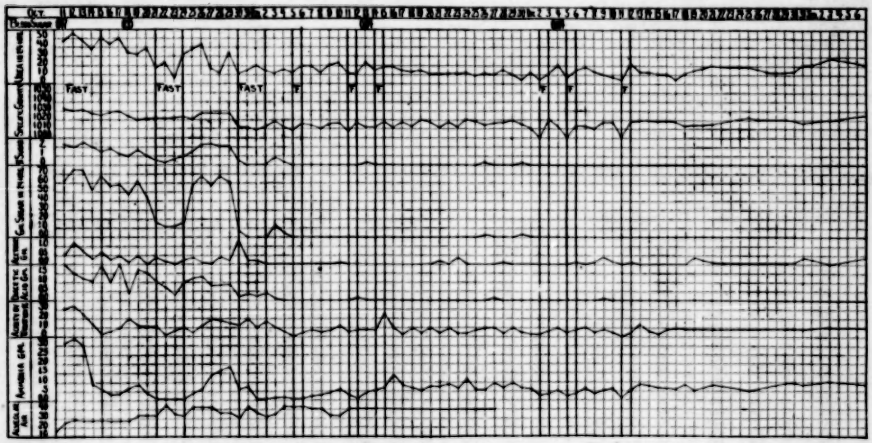
DIETETIC HELPS IN DIABETES

ROSE R. DONK, M.D.
BUFFALO

The treatment of diabetes demands exact regulation of diet. That proper dietetic management is amply rewarded by good clinical results has been shown by Allen. That such management admits of fairly definite lines of procedure has been further shown by Joslin.

It is with difficulty that the practitioner finds time to carry out such estimations of diet as are necessary in treating diabetes. The problem is to get the patient sugar-free and acid-free and to teach him to keep so. This is to be done primarily by the regulation of protein, fat and carbohydrate intake.

Is it possible to prearrange such combinations of food in series as shall form a convenient basis for the estimation of diabetic diets?



Laboratory record of a case of severe diabetes.

The dietetic requirement depends on the age and weight of the patient, on his accustomed diet and his adaptability to changes, on his condition as to obesity or leanness, and on his habits of exercise. Acidosis must be prevented. The metabolic derangement in diabetes concerns protein and fat as well as carbohydrate. The benefit from fasting, or "rest" days is due to this fact. Carbohydrate tolerance is in itself relative. This is shown in those cases in which the carbohydrate tolerance improves when the protein allowance is not kept at too high a level.

Laboratory analyses are a necessary guide for feeding. Such study, besides helping to secure improvement of the patient, is full of interest and suggestion. With a low blood urea the diabetic patient commonly puts out a large amount of urea in the urine. Like the patient with hyperthyroidism or with fever, he overexcretes and overconcentrates. However much this represents disturbed general metabolism, it may well represent also increased kidney stimulation and overwork. If, in becoming sugar-free and acid-free, the patient lowers a high urea index, he has scored an extra point.

The use of fat will be regulated by the patient's condition and by laboratory determinations of acetone, diacetic acid, ammonia and acidity of the urine. Alveolar air determinations are a reliable guide concerning acidosis. The Marriott apparatus is simple and sufficiently accurate.

The laboratory record of a case of severe diabetes is shown in the accompanying chart. The periods of fasting are indicated. The early record, showing acidosis and considerable sugar, contrasts with the later maintenance of a good report. When the patient went home he was able to take care of 83 gm. of protein, 147 of fat and 58 of carbohydrate—1,887 calories. The record of this case is shown through the kindness of Dr. Charles G. Stockton.

The patient, on presenting himself, had the clinical appearance of severe acidosis. His alveolar air was 17 mm.; that is, close to the danger point. The blood sugar was 0.47 gm. in 100 c.c. of blood. The urinary ammonia was high, as were also the acetone and diacetic acid. These figures and others are shown in the chart.

Various gradations of diet are necessary between the fasting periods, and thereafter, until the patient shall have become accommodated to caloric values that will maintain him satisfactorily. The morning's laboratory findings may show necessity for a change which may need to be made in time so that orders may be given both to the cook and to the grocer.

What combinations of protein, fat and carbohydrate are likely to be needed? Tables here shown illustrate such values as are helpful in following the scheme of treatment outlined by Joslin,[1] which he presents also in the form of directions to the patient.[2]

1. Joslin: Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1917.
2. Joslin: Diabetic Card, Form J. 8, Boston, Thomas Groom & Co., 105 State Street.

A diet virtually fat-free precedes the fasting period. Patients not having special tendency to acidosis are, according to this plan, put on from 100 to 200 gm. of 5 per cent. vegetables[3] and any desired amount of thin broth (containing no fat, little salt and low protein). Patients accustomed to full feeding must start with higher values of carbohydrate. Daily halving of these amounts will precede their final removal for the days of fasting, and avoid putting the patient too quickly on his own reserves of fat.

Table 1, Column 1, shows values for the 5 per cent. group of vegetables increasing 200 gm. at a time, protein being thus increased 4 gm. and carbohydrate 6 gm. for each two hundred. The 10 per cent. vegetables may be calculated in this column, 100 gm. of these being equivalent to 200 gm. of the 5 per cent. group. Any desired amount of 15 per cent. vegetable multiplied by 4 is approximately expressed as 5 per cent. vegetable. When feeding values are low, the 5 per cent. vegetables help satisfy appetite by their bulk. If values are higher, some of the 10 per cent. or of the 15 per cent. group are selected.

Table 1, Column 2, adds 30 gm. of potato to Column 1; Column 3, 30 gm. more, and Column 4, 30 gm. more. Columns 5, 6 and 7 represent the addition of bread, 30 gm. at a time. Throughout the tables here given, each column represents the amount of the preceding column plus the amount of a given food indicated at the head of the column.

TABLE 1.—VALUES FOR THE 5 PER CENT. GROUP OF VEGETABLES AND OF THE POTATO AND BREAD INCREASES

Column 1				2			3			4			5			6			7		
5 per Cent. Vegetable or Equivalent				Column 1 and 30 Gm. Potato			Column 2 and 30 Gm. Potato			Column 3 and 30 Gm. Potato			Column 4 and 30 Gm. Bread			Column 5 and 30 Gm. Bread			Column 6 and 30 Gm. Bread		
Gm.	P.	CH.	Cal.	P.	CH.	Cal.	P.	CH.	Cal.	P.	CH.	Cal.	P.	CH.	Cal.	P.	CH.	Cal.	P.	CH.	Cal.
200	4	6	40	5	12	68	6	18	96	7	24	124	10	42	208	13	60	292	16	78	376
400	8	12	80	9	18	108	10	24	136	11	30	164	14	48	248	17	66	332	20	84	416
600	12	18	120	13	24	148	14	30	176	15	36	204	18	54	288	21	72	372	24	90	456
800	16	24	160	17	30	188	18	36	216	19	42	244	22	60	328	25	78	412	28	96	496
1,000	20	30	200	21	36	228	22	42	256	23	48	284	26	66	368	29	84	452	32	102	536
1,200	24	36	240	25	42	268	26	48	296	27	54	324	30	72	408	33	90	492	36	108	576
1,400	28	42	280	29	48	308	30	54	336	31	60	364	34	78	448	37	96	532	40	114	616
1,600	32	48	320	33	54	348	34	60	376	35	66	404	38	84	488	41	102	572	44	120	656
1,800	36	54	360	37	60	388	38	66	416	39	72	444	42	90	528	45	108	612	48	126	696
2,000	40	60	400	41	66	428	42	72	456	43	78	484	46	96	568	49	114	652	52	132	736
2,200	44	66	440	45	72	468	46	78	496	47	84	524	50	102	608	53	120	692	56	138	776
2,400	48	72	480	49	78	508	50	84	536	51	90	564	54	108	648	57	126	732	60	144	816
2,600	52	78	520	53	84	548	54	90	576	55	96	604	58	114	688	61	132	772	64	150	856
2,800	56	84	560	57	90	588	58	96	616	59	102	644	62	120	728	65	138	812	68	156	896
3,000	60	90	600	61	96	628	62	102	656	63	108	684	66	126	768	69	144	852	72	162	936
3,200	64	96	640	65	102	668	66	108	696	67	114	724	70	132	808	73	150	892	76	168	976
3,400	68	102	680	69	108	708	70	114	736	71	120	764	74	138	848	77	156	932	80	174	1,016
3,600	72	108	720	73	114	748	74	120	776	75	126	804	78	144	888	81	162	972	84	180	1,056
3,800	76	114	760	77	120	788	78	126	816	79	132	844	82	150	928	85	168	1,012	88	186	1,096
4,000	80	120	800	81	126	828	82	132	856	83	138	884	86	156	968	89	174	1,052	92	192	1,136
4,200	84	126	840	85	132	868	86	138	896	87	144	924	90	162	1,008	93	180	1,092	96	198	1,176
4,400	88	132	880	89	138	908	90	144	936	91	150	964	94	168	1,048	97	186	1,132	100	204	1,216
4,600	92	138	920	93	144	948	94	150	976	95	156	1,004	98	174	1,088	101	192	1,172			
4,800	96	144	960	97	150	988	98	156	1,016	99	162	1,044	102	180	1,128						
5,000	100	150	1,000	101	156	1,028	102	162	1,056												

Table 1 serves in the days immediately preceding or following a fast, when fat is to be given in negligible amounts.

ILLUSTRATION OF THE METHOD

The patient has been limiting carbohydrate of his own accord, is a moderate eater, and has no particular tendency to acidosis.

He may be given 100 gm. of carbohydrate (provided this is not more than he has been having and not too sudden a decrease). Fats should be omitted. Protein, from 50 to 100 gm., may be given.

Table 1, Column 5, at 102 gm. of carbohydrate calls for 2,200 gm. of 5 per cent. vegetable or equivalent, 90 gm. of potato, and 30 gm. of bread. This represents 50 gm. of protein and 102 gm. of carbohydrate.[3]

The diet here given contains the equivalent of 2,200 gm. of 5 per cent. vegetable, 90 gm. of potato and 30 gm. of bread. It contains 102 gm. of carbohydrates and 50 gm. of protein, as shown in Table 1, Column 5.

ILLUSTRATIVE DIET CONTAINING 50 GM. OF PROTEIN AND 102 GM. OF FAT

	5% Vegetable, Gm.
Breakfast—	
Coffee	
Half of small orange, approximately equivalent to...	200
Tomatoes, 200 gm.	200
Celery, 100 gm.	100
Lettuce, 100 gm.	100
Dinner—	
Broth, 300 c.c.	
Potato, 60 gm.	
Beets, (10% group), 100 gm.	200
Cabbage, 300 gm.	300
String beans, 300 gm.	300
Supper—	
Potato, 30 gm.	
Bread, 30 gm.	
Squash (10%), 100 gm.	200
Turnip (10%), 100 gm.	200
Spinach, 300 gm.	300
Water cress, 100 gm.	100
Total	2,200

Table 2 provides for increasing amounts of 5 per cent. vegetable plus 300 c.c. of broth. In Column 3 of this table, fish (such kind as contains little fat) is first added. Column 4 adds one egg. If carbohydrate tolerance and fat tolerance are low, it is rarely possible to gain much by too great an increase of protein. Consequently, in Column 5 another egg (6 gm. of protein and 6 of fat) is added. If greater increase of protein is desired before the admission of fat, the whites of eggs may be given (the white of one egg contains 3 gm. of protein). In the next two columns, the use of cream and butter leads to a slow increase of the fat, though this is still kept below the protein. Addition of lean meat, 30 gm. at a time, makes possible a gradual protein increase, and 20 gm. of cheese (American pale)[4] increases both protein and fat moderately and contains only a decimal part of carbohydrate. Since the protein is ordinarily not to be increased to exceed

3. For lists of the 5, 10 and 15 per cent. vegetables see publications cited in either Note 1 or Note 2.

4. Atwater and Bryant: The Chemical Composition of American Food Materials, Bull. No. 28, U. S. Dept. of Agric., Washington, D. C., 1906.

the normal of 100 gm., addition of fat is now made slowly but more continuously, the protein in the table having reached from 74 to 102 gm.

It is to be noted that eventually, if the diabetic is to get good caloric value, he must do so by habituating himself to the use of fats, even allowing that he has good tolerance for carbohydrate; and, if one supposes, for example, such tolerance to be at 100 gm. the patient can have 100 gm. of protein and 100 gm. of carbohydrate, 800 calories. If he is to have even as high as 2,000 calories a day, 1,200 of this amount must then be given as fat, i. e., 133 gm. of fat.

When carbohydrate is being reduced the patient may be so relieved by diminished thirst that he takes pride in drinking very little. This tendency should be counteracted by the prescribing of the amount of fluid intake.

In addition to the tables herewith shown, many others may well be made out following whatever course is indicated. Familiarity with such outlines gives a comprehensive view of the dietetic procedure. Comparison of dietetic changes with laboratory charts and with the condition of the patient makes a definite picture of the course of diabetic cases.

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VITILIGO AND SYPHILIS

AN EXAMINATION OF THE EVIDENCE FOR THE SYPHILITIC ORIGIN OF VITILIGO *

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NEW HAVEN, CONN.

In the general confusion of dermatologic terminology, the achromias and dyschromias are particularly conspicuous, and vitiligo perhaps stands preeminent among them for the vagueness with which the name is used and for the variety of meanings attached to it. There is no general agreement among dermatologists as to what is meant by vitiligo, and almost every one who has written on the subject in English has given it a different signification, a fact to which I have previously called attention.[1] A recently observed designation of white scars, such as are produced by gummas or by tubercular syphilids as vitiligo, is an extreme example of what appears to me to be a misuse of the term.

TABLE 2.—VALUES FOR THE 5 PER CENT. GROUP OF VEGETABLES AND OF THE VARIOUS INCREASES (BROTH, FISH, EGG, FAT, LEAN MEAT, ETC.)

Column 1	2	3	4	5	6	7
5% Vegetable or Equivalent	Column 1 and 200 C.c. Broth	Column 2 and 90 Gm. Fish	Column 3 and 1 Egg	Column 4 and 1 Egg	Column 5 and 30 C.c. 20% Cream	Column 6 and 10 Gm. Butter
Gm.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.
200	15 6 7 76	31 6 7 165	37 6 6 226	43 12 6 304	44 18 7 366	44 36 7 438
400	17 12 11 116	35 12 12 188	41 6 12 266	47 12 12 344	48 18 13 406	48 36 13 478
600	21 18 15 156	39 18 16 228	45 6 16 306	51 12 16 384	52 18 17 446	52 36 19 518
800	23 24 19 196	43 24 20 268	49 6 24 346	55 12 24 424	56 18 25 486	56 36 25 558
1,000	29 30 22 236	47 30 26 308	53 6 30 386	59 12 30 464	60 18 31 526	60 36 31 598
1,200	33 36 27 276	51 36 34 348	57 6 36 426	63 12 36 504	64 18 37 566	64 36 37 638
1,400	37 42 31 316	55 42 38 388	61 6 42 466	67 12 42 544	68 18 43 606	68 36 43 678
1,600	41 48 36 356	59 48 42 428	65 6 48 506	71 12 48 584	72 18 49 646	72 36 49 718
1,800	45 54 40 396	63 54 46 468	69 6 54 546	75 12 54 624	76 18 55 686	76 36 55 758
2,000	49 60 43 436	67 60 50 508	73 6 60 586	79 12 60 664	80 18 61 726	80 36 61 798
2,200	53 66 47 476	71 66 54 548	77 6 66 626	83 12 66 704	84 18 67 786	84 36 67 838
2,400	57 72 51 516	75 72 58 588	81 6 72 666	87 12 72 744	88 18 73 806	88 36 73 878
2,600	61 78 55 556	79 78 62 628	85 6 78 706	91 12 78 784	92 18 79 846	92 36 79 918
2,800	65 84 58 596	83 84 66 668	89 6 84 746	95 12 84 824	96 18 85 886	96 36 85 958
3,000	69 90 62 636	87 90 70 708	93 6 90 786	99 12 90 864	100 18 91 926	100 36 91 998
3,200	73 96 66 676	91 96 74 748	97 6 96 826	103 12 96 904		
3,400	77 102 70 716	95 102 78 788	101 6 102 866			
3,600	81 108 75 756	99 108 82 828				
3,800	85 114 79 796					
4,000	89 120 83 836					
4,200	93 126 87 876					
4,400	97 132 91 916					
4,600	101 138 95 956					

8	9	10	11	12	13	14
Column 7 and 30 Gm. Lean Meat	Column 8 and 30 Gm. Lean Meat	Column 9 and 30 Gm. Lean Meat	Column 10 and 20 Gm. Am. Pale Cheese	Column 11 and 30 C.c. 20% Cream	Column 12 and 30 C.c. 20% Cream	Column 13 and 10 Gm. Butter
P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.
52 31 7 515	60 36 7 592	68 41 7 668	74 48 7 756	75 54 8 818	76 60 9 880	76 68 9 952
56 31 13 555	64 36 13 632	72 41 13 708	78 48 13 796	79 54 14 858	80 60 15 920	80 68 15 992
60 31 19 595	68 36 19 672	76 41 19 748	82 48 19 836	83 54 20 898	84 60 21 960	84 68 21 1,032
64 31 25 635	72 36 25 712	80 41 25 788	86 48 25 876	87 54 26 938	88 60 27 1,000	88 68 27 1,072
68 31 31 675	76 36 31 752	84 41 31 829	90 48 31 916	91 54 32 978	92 60 33 1,040	92 68 33 1,112
72 31 37 715	80 36 37 792	88 41 37 869	94 48 37 956	95 54 38 1,018	96 60 39 1,080	96 68 39 1,152
76 31 43 755	84 36 43 832	92 41 43 909	98 48 43 996	99 54 44 1,058	100 60 45 1,120	100 68 45 1,192
80 31 49 795	88 36 49 872	96 41 49 949	102 48 49 1,036	103 54 50 1,098		
84 31 55 835	92 36 55 912	100 41 55 989				
88 31 61 875	96 36 61 952					
92 31 67 915	100 36 67 992					
96 31 73 955						
100 31 79 995						

15	16	17	18	19	20	21	22
Column 14 and 10 Gm. Butter	Column 15 and 30 Gm. Bacon	Column 16 and 30 C.c. 20% Cream	Column 17 and 30 Gm. Lean Meat	Column 18 and 1 Egg	Column 19 and 10 Gm. Butter	Column 20 and 15 C.c. Olive Oil	Column 21 and 15 C.c. Olive Oil
P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.	P. F. CH. Cal.
76 76 9 1,024	81 91 9 1,179	82 97 10 1,241	90 102 10 1,318	96 108 10 1,396	96 116 10 1,468	96 131 10 1,603	96 146 10 1,738
80 76 15 1,064	85 91 15 1,219	86 97 16 1,.81	94 102 16 1,358	100 108 16 1,436	100 116 16 1,508	100 131 16 1,643	100 146 16 1,778
84 76 21 1,104	89 91 21 1,259	90 97 22 1,321	98 102 22 1,398				
88 76 27 1,144	93 91 27 1,299	94 97 28 1,361	102 102 28 1,438				
92 76 33 1,184	97 91 33 1,339	98 97 34 1,401					
96 76 39 1,224	101 91 39 1,379	102 97 40 1,441					
100 76 45 1,264							

* Read before the Section on Dermatology at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Lane, J. E.: Albinism, Leucoderma, Vitiligo, Med. Rec. 90: 986, 1916.

In this paper I use vitiligo as defined by the French school of dermatologists, not with the intention of making an etiologic distinction between some of the different dyschromias, but because the French definition is clear, definite and limited; because it is the one definition that is accepted by an entire school of dermatologists, and because I see no escape from confusion except by limiting the subject under discussion. The obscurity of the etiology of many of the dyschromias necessitates, for the present at least, the clear differentiation of the distinct clinical types, although it is possible and even probable that many of them have the same causation, and vary clinically with the degree of activity of the etiologic factor, as it is also possible and likely that some identical manifestations may have different etiologies.

DIFFERENTIATING SYMPTOMS

Since Hardy and Bazin, the French have differentiated vitiligo and leukoderma, which had previously been used synonomously, and which to a large extent are still so used by German, English and American dermatologists. Referring to the German usage, Besnier and Doyon,[2] in their translation of Kaposi, said that "for us there is no achromatic vitiligo; vitiligo is always both achromatic and hyperchromatic."

Vitiligo, then, is defined as an acquired dyschromia, characterized by the development of one or more sharply limited spots of depigmentation surrounded by a more or less extensive hyperpigmented border, showing no modification of the structure or function of the skin.

It is sharply differentiated from leukoderma, which is an acquired achromia only (that is, achromia without any attendant hyperchromia), and it does not include the rare leukomelanoderma of Fournier nor the areolar pigmentary syphilid of the neck, described by Hardy in 1853, and later so thoroughly studied by Fournier and others.

FORMER VIEWS OF ITS ETIOLOGY

Those who have studied vitiligo have suggested many diseases as its cause, in fact almost all of the diseases with which it is occasionally associated have been considered. As is usual in diseases of obscure etiology, disturbances, defects or diseases of the nervous system have frequently been invoked to cover a lack of information, and such different nervous conditions as tabes and sudden fright are suggested. One case is even reported in which a fright during the night was, the next morning, found to have produced a patch of vitiligo (I suspect the author meant leukoderma) covered with hair which had bleached at the same time.[3] Among other diseases which have been mentioned as possible causes of vitiligo are hyperthyroidism and hypothyroidism, exophthalmic goiter and myxedema, Addison's disease, chorea, psoriasis, pernicious anemia, colitis, various diseases of the biliary organs, scarlet fever, various diseases of the eye, traumatism and autointoxication, lichen planus and giant colon. And McDonagh[4] has recently suggested disturbances of the sympathetic nerve system.

2. Besnier et Doyon, in Kaposi: Leçons sur les maladies de la peau, Paris **2**: 151, 1881.
3. Hesse: Ein aetiologisch interessanter Fall von Vitiligo, Deutsch. med. Wchnschr. **35**: 1753, 1909.
4. McDonagh, J. E. R.: Treatment of Some Skin Diseases Based on the Theory of Oxidation and Reduction, Brit. J. Dermat. **30**: 67, 1918.

RECENT VIEW OF ITS ETIOLOGY

The possibility of vitiligo being of syphilitic origin is a comparatively recent suggestion, though in 1882 Leloir[5] had noticed its frequent occurrence in tabetics. This, however, was before tabes had been accepted as a syphilitic disease. In 1889 Tenneson[6] called attention to the occurrence of vitiligo in syphilitics, and a few years later others noted the same thing. Little or no attention was paid to these observations and it was not until 1902 that syphilis seriously entered into consideration as a possible cause of vitiligo. In that year Marie and Guillain,[7] Souques[8] and Marie and Crouzon[9] reported cases and aroused considerable interest in the subject by definitely propounding the question of whether there was an etiologic relationship between them.

In 1905 Thibierge[10] published an article reviewing the previous observations on the question and at the same time reported three cases of vitiligo in patients in whom vitiligo had been present for some time before the acquisition of syphilis. He recognized the possibility of the acquired syphilis being a second infection of a patient with attenuated hereditary syphilis, but deemed it improbable, as demonstrated cases of such infections were extremely rare. Thibierge did not entirely reject the theory of the syphilitic origin of vitiligo but remarked, as previous observers had, that the question was difficult and that a large number of observations would have to be collected before a conclusion could be reached.

Thibierge's observations apparently discouraged interest in the subject for some time, as it attracted almost no attention from that time until four or five years ago. The discovery of the Wassermann reaction had in the meantime added a means of demonstrating syphilis in many cases in which it had previously not been demonstrable. In 1914 Crouzon and Foix[11] and others called attention to the presence of vitiligo in hereditary syphilitics.

The following recent statements are fairly typical of the various opinions that are now held in regard to the syphilitic etiology of vitiligo:

Darier[12] says, "I have been struck with the relative frequency of syphilis in patients having vitiligo, as have several other authors; we cannot, however, at present admit that a syphilitic origin exists, and still less can we admit that all vitiligo is dependent on this infection." Pautrier[13] says, "The syphilitic origin of vitiligo is manifesting itself more and more frequently since it has been searched for systematically especially by means of the Wassermann reaction." Hudelo[14] says, "In spite of everything, the opinion which tends to attach certain cases of vitiligo to syphilis is becom-

5. Leloir: Recherches cliniques et anatomo-pathologiques sur les affections cutanées d'origine nerveuse, Thèse de Paris, 1881.
6. Tenneson: Vitiligo et syphilis, Ann. de dermat. et syph. **10**: 345, 1889.
7. Marie et Guillain: Vitiligo avec symptomes tabétiformes, Rev. néurol. **10**: 273, 1902.
8. Souques: Vitiligo et signe d'Argyll-Robertson, Rev. neurol. **10**: 247, 1902.
9. Marie et Crouzon: Vitiligo et syphilis, Bull. Soc. franç. de dermat. et syph. **13**: 414, 1902.
10. Thibierge: Sur les relations du vitiligo et de la syphilis, Ann. de dermat. et syph. **6**: 128, 1905.
11. Crouzon et Foix: Vitiligo et hérédo-syphilis, Bull. et mém. Soc. méd. d. hôp. de Par. **37**: 780, 1914.
12. Darier: Précis de dermatologie, Ed. 2, 1918, p. 360.
13. Pautrier et Rabreau: Vitiligo chez un syphilitique présentant encore des lésions erythémateuses en bordure des placards achromiques, Bull. Soc. franç. de dermat. et syph. **25**: 314, 1914.
14. Hudelo: Discussion of Pautrier et Rabreau, Bull. Soc. franç. de dermat. et syph. **25**: 318, 1914.

ing general." Milian[15] says, "Vitiligo is a pure syphilitic manifestation."

REPORTS OF CASES IN WHICH ITS RELATION TO SYPHILIS IS DISCUSSED

In this paper I have attempted to collect the case reports in which the question of the relationship of syphilis and vitiligo is discussed, and have examined most of the literature on the achromias and dyschromias published since 1906, that date being a convenient starting point, as it was the year of the publication of the discovery of the Wassermann reaction. It has, however, been impossible to consult much of the German literature of the last few years.

It is impossible in a paper of this sort to relate the details of the individual cases reported. It suffices to say that I have included only such cases as conformed to the definition of vitiligo given above and only those cases in which the question of the presence or absence of syphilis was mentioned. As might be inferred from previous remarks, it was surprising to find how many conditions are described under the name of vitiligo, and hence the large number of cases so reported that could not be included in this summary.

It should be noted that a considerable number of the cases were in patients suffering with quaternary syphilis of the central nervous system, although I have not indicated them. Table 1 gives the results obtained.

In a total of 118 cases of vitiligo sixty-one, or 51.7 per cent., were demonstrated to be syphilitic; nineteen, or 16.1 per cent., were hereditary syphilis; fifteen, or 12.7 per cent., had suspicious though not characteristic signs of hereditary syphilis; forty-two, or 35.6 per cent., were negative, or if the suspicious but unproved cases are included, fifty-seven, or 48.3 per cent., were negative.

There are, however, certain evident characteristics of statistics of this sort which prevent them from being taken at their face value. The chief one is that they are composed for large part of reports of one or two cases by different observers, many of whom have reported positive cases only, perhaps having been interested in the subject for a short time and having chanced on a case or two in which syphilis was evident. Such statistics are bound to give an unwarrantedly high percentage of positive cases. The statistics are likely to be of more value when a considerable number of cases have been carefully studied by one observer. Among the reports given above, those of Joltrain, Vignolo-Lutati, Withe and his associates are of especial interest.

Joltrain examined eighteen patients with vitiligo, of whom thirteen, or 72.2 per cent., were syphilitic; three, or 16.6 per cent., hereditary, and five, or 27.8 per cent., were negative. The details of the examinations made by Joltrain are not given, but they were undoubtedly thorough, though examination of the spinal fluid was probably not made in the negative cases.

Vignolo-Lutati examined fifteen patients, of whom five, or 33.3 per cent., were syphilitic; three, or 20 per cent., hereditary, and ten, or 66.7 per cent., were negative. The reports of positive cases showed careful investigation of the patients and though nothing is said in regard to those found not syphilitic, it is to be presumed that these were examined with the same care. Here again it is probable that the spinal fluid was not examined in the cases that were otherwise negative.

15. Milian: Discussion of Pautrier et Rabreau, Bull. Soc. franç. de dermat. et syph. **25**: 319, 1914.

The report of Withe and his associates is of the greatest value and deserves closer examination. The patients on whom the report was based were studied at the weekly meetings of a group of English, French and Belgian army officers during the war. All but two of the patients were soldiers, two were women. The opportunities for study of the patients were ideal, as all desired examinations could be made. The patients were all carefully examined, spinal fluid examinations and provocative injections of salvarsan were made in doubtful cases, revealing three positive cases that would otherwise have remained negative or unproved.

TABLE 1.—CASES OF VITILIGO IN ITS RELATION TO SYPHILIS THAT HAVE BEEN GLEANED FROM THE LITERATURE

Author, Title and Publication	No. Patients Examined	No. Syphilitic	No. Hereditary Syphilis	No. Negative
Danlos & Debêtrain: Pelade et vitiligo, Bull. Soc. franç. de dermat. et de syph. **17**:148, 1906; also in Ann. de dermat. et de syph. **7**:288, 1906	1	1	..	..
Marah: A case of vitiligo with a history of heredity, New York Med. Jour. **92**:371, 1910	1	1	1	..
Erdman: Zur Frage eines Zusammenhangs zwischen Vitiligo und Augenleiden, Klin. Monatsbl. f. Augenh. **49**:139, 1911	1	..	..	1
Marie & Crouzon: Vitiligo et syphilis, Bull. et mém. Soc. méd. d. hôp. de Paris **34**: 8, 1912	1	1	..	..
Gaucher, Gougerot & Audebert: Vitiligo et syphilis, Bull. Soc. franç. de dermat. et de syph. **24**:259, 1913	1	1	..	..
Bacaloglu & Parbon: Sur un cas de vitiligo à topographie en ceinture, Nouv. iconog. de la Salpêtrière **26**:209, 1913	1	1	..	..
Delacour: Vitiligo, syphilis et hérédo-syphilis, Thèse de Paris, 1913-1914	4	4	..	..
Joltrain: Discussion of Pautrier et Rabreau, Bull. Soc. franç. de dermat. et de syph. **25**:318, 1914	18	13	3	5
Hudelo: Discussion of Pautrier, Bull. Soc. franç. de dermat. et syph. **25**:318, 1914	1	1	..	..
Etienne: Vitiligo, épilepsie et hérédo-syphilis, Bull. et mém. Soc. méd. d. hôp. de Paris **38**:955, 1914	1	1	1	..
Merklen & Le Blanc: Vitiligo généralisé avec signe d'Argyll Robertson, bull. et mém. Soc. méd. d. hôp. de Paris **37**:1947, 1914	1	1	..	..
Crouzon & Poix: Vitiligo et hérédo-syphilis, Bull. et mém. Soc. méd. d. hôp. de Paris **37**:780, 1914	1	1	1	..
Pautrier & Rabreau: Vitiligo chez un syphilitique présentant encore de lésions érethémateuses en bordure des placards achromiques, Bull. Soc. franç. de dermat. et syph. **25**:314, 1914	1	1	..	..
Arullani: La vitiligo nell'eredo-sifilide, Policlinico **21**:1033 (sez. prat.), 1917	2	2	2	..
Guillain & Laroche: Parapégie spasmodique avec vitiligo généralisé, Bull. et mém. Soc. méd. d. hôp. de Paris **37**:191, 1914	1	1	..	..
Merklen: A propos de l'origine syphilitique du vitiligo, Bull. et mém. Soc. méd. d. hôp. de Paris **41**:769, 1917; also in Jour. de méd. de Paris, **37**:15, 1918	2	1	..	1
Khoury: Deux cas de vitiligo syphilitique: Importance de la pathogénie syphilitique du vitiligo dans les foyers endémiques de lèpre, Bull. et mém. Soc. méd. d. hôp. de Paris **38**:85, 1914	2	2	..	..
Lane, J. E.: Personal cases not previously reported: clinical examination and Wassermann reaction: spinal fluid not examined	2	1	1	2
Auer: Vitiligo and syphilis of the central nervous system, Am. Jour. Med. Sc. **154**: 502, 1917	4	4	..	..
Gougerot: Vitiligo familial et hérédo-syphilis, Bull. Soc. franç. de dermat. et de syph. **25**:334, 1914	1	1	1	..
Pautrier: Vitiligo et syphilis, Bull. Soc. franç. de dermat. et de syph. **25**:325, 1914	2	2	1	..
Balzer & Galliot: Contribution à l'étude du vitiligo syphilitique, Bull. Soc. franç. de dermat. et de syph. **25**:357, 1914	3	1	..	2
Vignolo-Lutati: Vitiligo e sifilide, Giorn. Ital. d. mal. ven. **57**:317, 1916 (this article is abstracted in Jour. Cutan. Dis. **25**:290, 1917)	15	5	3	10
Withe, Dawson, Brown, MacWirter, Vanhaecke, Campinchi, Dujardin & Colard: Vitiligo et Syphilis, Presse méd. **26**:640, 1918 *	50	14	5	21
Totals	118	61	19	42
Percentages		51.7	16.1	35.6
Negative (including suspicious but unproved cases)				57
				48.3%

* Number suspicious (not proved), 15 (12.7%).

Fifty patients were examined, of whom fourteen, or 28 per cent., were syphilitic; five, or 10 per cent., were hereditary; fifteen, or 30 per cent., showed signs suspicious but not conclusive of hereditary syphilis; twenty-one, or 42 per cent., were negative; or counting the suspicious but unproven cases as negative, thirty-six, or 72 per cent., were negative.

The results obtained by these three observers show a striking similarity. Taken together, they give the results shown in Table 2, all unproved cases being classed as negative.

TABLE 2.—RELATION OF VITILIGO TO SYPHILIS IN THE CASES OF THREE OBSERVERS

	Number of Patients	Syphilitic		Hereditary		Negative	
		No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Joltrain.....	18	13	72.2	3	16.6	5	27.8
Vignolo-Lutati..	15	5	33.3	3	20.0	10	66.7
Withe et al.	50	14	28.0	5	10.0	36	72.0
Total.....	83	32	38.5	11	13.2	51	61.5

Of eighty-three cases of vitiligo, thirty-two, or 38.5 per cent., were in syphilitics. Not included in the figures given in Table 2 there were in Withe's series four additional patients who had vitiligo previous to contracting syphilis. These observations confirm those made previously by Thibierge, though their deduction differs from his. They conclude that "this fact is not an objection to a primary hereditary infection. Binary syphilis must be especially frequent in the attenuated forms of hereditary syphilis."

Remarking on the fifteen patients who showed signs suspicious of hereditary syphilis, but in whom syphilis could not be certainly demonstrated, Withe and his associates say that "if vitiligo begins in infancy, it frequently coexists with signs which may be interpreted as belonging to a benign form of hereditary syphilis; on the other hand, the classical signs of hereditary syphilis are lacking in such cases." The deduction made by them from their results is that "it is impossible to arrive at the definite conclusion that there is a relation of cause and effect between syphilis and vitiligo, but the intensive study of the cases (including reactivation) is causing this hypothesis to gain ground."

It seems to me that this is a conservative conclusion to be drawn from their cases, as well as from the other cases here collected, and that it is as far as present evidence permits us to go.

Up to the present no other disease has been demonstrated to be present in anything like this proportion in patients with vitiligo, and one deduction at least is certain, that the search for syphilis is demanded in every case of vitiligo.

I will close with the subject with which I began by making the suggestion that while the etiology of the dyschromias remains as obscure as it is at present, it will assist a little in clarifying the discussions on them, to differentiate the different clinical forms as sharply as possible. The use of the term vitiligo as defined by the French school seems to be the logical one.

ABSTRACT OF DISCUSSION

DR. WILLIAM ALLEN PUSEY, Chicago: With reference to the distinction between leukoderma and vitiligo, which the French make, there is no ground for such a distinction. Leukoderma means a loss of pigment in an area with an increase of pigment around it. I have never seen a case without this increase of pigment around it and when it did not appear macroscopically it could always be found microscopically. I submit that the opinions on vitiligo and syphilis are not conclusive and until they are proved conclusively why should we suppose that anybody with a white spot on his skin has syphilis? Why should anybody who sees a dyschromia on a person's skin think of syphilis? It quite often causes it but in quite a different form, just as syphilis causes an alopecia, but a true alopecia is quite different from syphilitic alopecia. We have a number of other granulomas, why not indite them? Leukodermias are not rare; vitiligos of the type Dr. Lane describes are not rare, and in my experience they have not occurred in people in whom I could find syphilis or where I had good grounds for suspecting syphilis. I have not made a Wassermann test for vitiligo and I have not made spinal punctures for vitiligo because I feel that a person who is still alive is entitled to some consideration, but I have watched for syphilis in cases of vitiligo and I am willing to say that in my experience I have found nothing to strengthen that ground.

DR. HARRY G. IRVINE, Minneapolis: It would be extremely unfortunate to regard with suspicion any one who has a white spot on the face. I have watched very carefully, with negative results. We examined fifty patients carefully for syphilis. After examining twenty-five or thirty the results were so much in the negative side, only two or three cases having been found in which syphilis was present, that we gave up the work.

DR. FRED WISE, New York: I agree with Dr. Pusey that I cannot differentiate the French vitiligo and our leukoderma. I also agree with Dr. Pusey in regard to the relationship between vitiligo and syphilis. However, vitiligo may be produced in people due to changes which syphilis may also produce. Vitiligo may be produced by headaches or cholecystitis or any other reason in the same way that syphilis produces it, by the endocrine glands.

DR. JAY FRANK SCHAMBERG, Philadelphia: I have seen vitiligo begin simultaneously in a young woman who developed an exophthalmic goiter. There are numerous reports in the literature referring to disturbances in the thyroid gland and concomitant to vitiligo. Syphilis is such a widespread disease that we must expect to find a certain percentage of vitiligo in syphilis. Dr. Lane's paper is valuable because it enables us to study the two affections. I believe with Dr. Wise that the lodgment of spirochetes in certain places may result in vitiligo. We all recall that in recent years there was a tendency on the part of some authors to associate scleroderma and syphilis. There is no doubt that vitiligo may be found in a large number of syphilitics, but I cannot believe that syphilis is the cause of vitiligo.

DR. JOSEPH ZEISLER, Chicago: I have had a lady under my observation for several years who has had vitiligo which did not change very much. About six months ago she developed a scleroderma and recently a zoster on the chest. It is well known that all these conditions are attributed by many observers to disturbance of the trophic nerves. So far as vitiligo and syphilis are concerned, I have noticed a few cases of coincident syphilis and vitiligo and also diffused symptoms of syphilis, but not of causal relationship, simply a coincidence.

DR. HENRY H. HAZEN, Washington, D. C.: It seems to me that the matter of pigment around the edges of these patches is due to the amount of exposure to the sun. I know of one instance in which seven members of the family have vitiligo, but when they are in the house in the winter or when they are ill there is practically no pigmentation. In the summer time when they are exposed to the sun the border is more pronounced. I cannot see that there is much difference between the cases with hyperpigmentation and those without; I think it is a question of sunlight. I have examined twenty-one patients who consented to a blood Wassermann test, and only one had a positive Wassermann reaction.

DR. HENRY R. VARNEY, Detroit: We are familiar with the conception of the French, but I must agree with Dr. Pusey that I cannot differentiate these two conditions. I believe

that much is due to the color and race of people who are examined.

DR. JOHN E. LANE, New Haven, Conn.: I do not think Dr. Pusey thought I had an argument of the syphilitic origin of vitiligo. I did not intend to give that impression, but the frequency with which syphilis occurs in the general population accounts for much of it. We get reports which are not accurate because they are reported by different observers, who get only 33 per cent. of syphilis. That is considerably more than the French give, but we certainly could not put it down as of etiologic significance. Dr. Schamberg refers to exophthalmic goiter. I found a large number of such cases recorded in the literature and that a cause looks likely in a certain number of cases. As far as the pigmentation being due to the sun is concerned, I do not believe that is entirely so. It may be in some cases, but some of the most deeply pigmented patches occurred on the body where it was covered with corsets and other clothing, where the action of sunlight could have very little, if any, effect. My point in separating vitiligo from the other dyschromias was not for differentiation. My point in calling attention to that was to impress on us that we cannot give a different definition for vitiligo every time we write on the subject. I think it is perfectly satisfactory to use the terms vitiligo and leukoderma synonymously. If everybody would define them as Schamberg does in his book, a white spot with a hyperpigmented border, that would be absolutely satisfactory; but when you look through the textbooks on the subject you are merely confused. McDonough says it is usually surrounded by a hyperpigmented border; but at the end of the paragraph he says this certainly is the exception and not the rule. Some authors say the change may be primary or secondary. You cannot include the syphilid of the neck in vitiligo; we know the etiology of that, and it simply is to differentiate the pure achromias which we are studying that I brought that point out.

THE PSYCHIC FACTOR AS AN ELEMENT IN TEMPERATURE DISTURBANCE

SHOWN BY SOME OBSERVATIONS IN THE SELECTIVE DRAFT *

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Medical men are quite familiar with the temperature variations associated with the commoner clinical syndromes. Pneumonia, typhoid and similar conditions often present such typical febrile reactions that physicians are prone to associate the merely clinical picture with the temperature curve, little considering the underlying pathologic physiology of the variation. But fever and temperature elevation are hardly synonymous. In the words of MacCallum[1]: "Although elevation of body temperature is one of the salient points, it is by no means the only characteristic, nor is it itself always to be regarded as an infallible sign of fever."

Clearly, it is of considerable practical importance to recognize and interpret the type of temperature change which is unaccompanied by noticeable clinical signs. This kind of variation has been noted repeatedly, particularly by physiologists, who have definitely shown, both in the case of man and of certain experimental animals, that exercise,[2] the taking of food[3] and changing of posture[4] are accompanied by very distinct temperature variations. In the literature are numerous instances of diurnal temperature fluctuation in man and lower members of the animal kingdom. The daily amplitude of the crow is 3 degrees F.[5] The thrush, seagull, pigeon and owl have a fairly constant curve, the amplitude varying inversely with the size of the bird.[6] Monkeys have a definite diurnal curve, rising and falling with activity and rest, with an amplitude of 4.5 degrees F. Man's diurnal wave resembles the monkey's, except that the limits of variation are narrower, and the contour of the curve seems less affected by changes in activity.[6]

The credit for observing and attempting to interpret some of these obscure temperature changes belongs, principally, to the physiologists. In large measure, they are also responsible for studying and ascertaining, at least in part, the physiologic determinants of body heat control. It will be well to review briefly some of these forces and the influences modifying them; for it is only through familiarity with these facts that temperature variations, particularly of the nonfebrile type, become explicable.

HEAT REGULATION

That body temperature depends on a balance between heat production and heat dissipation is generally accepted, but the mechanism maintaining the balance is a mooted question. The evidence of earlier workers seemed to establish the existence of a "heat center" at the base of the brain.[7] Richter[8] noted that a dog with a normal temperature of 101.5 F. shivered on lowering, and perspired on rising, the temperature from this point; the same dog, with a fever of 104.7 F., showed the same reaction when his temperature was varied from this new level. Another investigator[9] observed no temperature variation following antipyretics or septic injections after section of the basal cerebral nuclei. With the "heat center" theory came the convenient and attractive "thermostat" concept[10] of febrile reactions: that the center is set for one level in health and another in disease, the latter, of course, representing the optimum for the body's defensive mechanisms. According to Hewlett,[11] in disease "the nervous centers which normally control the body temperature appear to be so deranged or, one may say, so stimulated, that they regulate the body temperature at a new and abnormally high level."

But despite this evidence, many more recent workers[12] are less certain of a special heat center. Pembrey,[13] after several weeks of careful postnatal observation of heat control in young mammals and birds, concludes that the compensation between heat production and loss brought about by physical and chemical means is enough in itself to regulate temperature. Moore,[2] noting no temperature change in animals after needling the caudate nucleus and then extirpating it and the cerebrum, believes there is no cerebral heat center. In cautiously reviewing the question, Sollmann[14] concludes that while it is attractively convenient to assume a special heat regulating mechanism

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* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. MacCallum, W. G.: Harvey Lecture, 1908.
2. Moore, L. M.: Regulation of Body Temperature in Rabbit, Am. J. Physiol. **44**: 244 (June) 1918. Galbraith: Proc. Physiol. Soc., London **30**: 20, 1903.
3. Moore (Footnote 2).
4. Kraus: Arch. f. exper. Path. u. Pharmakol. **72**: 97, 1903.
5. Galbraith (Footnote 2).
6. Galbraith: Proc. Physiol. Soc. London **30**: 19, 1903.
7. Aronsohn and Sachs: Arch. f. d. ges. Physiol. **37**: 232, 1886.
8. Richter: Virchows Arch. f. path. Anat. **123**: 118.
9. Sawadowski: Centralbl. f. d. med. Wissensch. 1888, p. 145.
10. Cushny, A. R.: Textbook of Pharmacology, Philadelphia, Lea and Febiger, 1915, p. 479.
11. Hewlett: Oxford Medicine **1**, pt. 2, 1919, p. 139.
12. Sachs and Green: Am. J. Physiol. **42**: 603, 1916. Mosso, Arch. f. exper. Path. u. Pharmakol. **26**: 316, 1890.
13. Pembrey, M. S.: Lancet **2**: 217 (Aug. 5) 1916.
14. Sollmann: Manual of Pharmacology, 1917, p. 448.

(probably throughout the midbrain, especially in the region of the corpora quadrigemina) there is no binding evidence of such a center.

Whatever the regulating medium—be it physiologic balance or specific nervous mechanism—the physical processes it controls, the actual determinants of the balance, are heat production and heat dissipation. Heat dissipation, since largely dependent on such processes as sweating and vasodilatation, is manifestly under sympathetic control.[1] Heat production has been variously attributed to changes in muscle tone[15] and to variations in metabolism.[16] Many physiologists —among them Pembrey and Starling—believe that the muscles, which "comprise by weight over one half of the soft parts, are the main element in heat production, heat formation varying with the state of their tone." Though Hirsch and Rolly,[17] after studying curarized animals, deny this function of the muscles and believe carbohydrate combustion in the liver responsible, the work has not been confirmed. In fact, curarized animals have since been observed to be poikilothermic.[18] If this conception of temperature-determining forces is kept clearly in mind, the explanation of nonfebrile variations in body heat becomes less difficult.

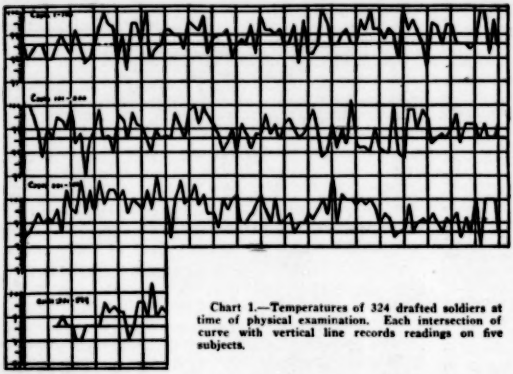

Chart 1.—Temperatures of 324 drafted soldiers at time of physical examination. Each intersection of curve with vertical line records readings on five subjects.

PSYCHIC INFLUENCES

Physiologists some time ago made a start in associating definite physical causes with the characteristic fluctuations of the diurnal curve. Of more practical clinical significance would seem to be the relation of such psychic states as suspense and anxiety to temperature. Obviously, animal experimentation is impracticable in this connection. The frightened rabbit, tied to the operating board, shows temperature elevation,[3] but whether from fear, struggle or both is manifestly uncertain.

Because of these difficulties, most investigation in this direction has been on man. The temperatures of the human brain itself,[19] and of the body,[20] during mental activity, have been noted with somewhat varying results. Though Clifford Allbutt,[21] in a lengthy series, found no changes in body temperature after mental work, other observers have noted rises of 0.2 to 1.3 degrees F.[22] The data of this paper have reference, not so much to mental activity, as to fear and suspense in their relation to temperature variation. Membership on a draft examining board has enabled me to observe a fair number of selective service candidates at the time of their physical examinations (Series 1 in the accompanying tabulation.) It has also been possible to take temperature of 130 applicants taking a nurses' registration examination (Series 2). In forty of this series (Group A), the temperature was taken immediately before and after the examination; in the other ninety (Group B), during the first and last hours of the examination. The data may be thus summarized:

Series 1. The average temperature of 324 subjects, over two thirds of whom showed temperature elevation, was 99.3 F. Of the remainder, about one half were normal; the rest, subnormal.

Series 2, Group A. The average temperatures of forty subjects immediately before and after state board examination were 98.9 F. and 98.3 F., respectively.

More than two thirds showed 0.6 F. elevation before the examination. Three fifths showed over half a degree depression after it. About three fourths showed an average fall of 0.9 F. between readings.

Group B. The average temperatures of ninety subjects during the first and last hours of state board examination were 98.7 F. and 98.6 F., respectively. Only one half showed a fall between readings, averaging scarcely half a degree.

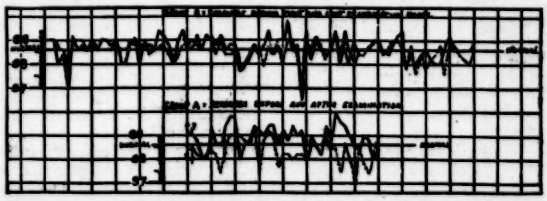

Chart 2.—Temperatures of 130 nurses before, during and after state board examination: solid line, first reading; broken line, second reading. Each intersection of curve with vertical line represents readings on five subjects; thus, *x*, *x* is amplitude for one nurse, and *y*, *y* for another.

The draft figures clearly indicate a tendency to temperature elevation which is too uniform to be attributable to diurnal variation alone. Unfortunately, the exact time of the readings was not recorded, but the examinations extended through the day, and the tendency to elevation apparently characterized morning

15. Pembrey (Footnote 13) Wilson: Brain **30**: 427, 1913. Starling: Textbook of Physiology, 1915, p. 1170.
16. Senator and Richter: Ztschr. f. klin. Med. **54**: 16, 1904.
17. Hirsch and Rolly: Deutsch. Arch. f. klin. Med. **75**: 307, 1903.
18. Starling (Footnote 15).
19. Cavazzani: Arch. ital. de biol. **19**: 328, 1893.
20. Mosso: Proc. Roy. Soc. London **51**: 83, 1892. Hill, Nabarro: J. Physiol. **18**: 218, 1895. Roy, Sherrington: Ibid. **11**: 85, 1890.
21. Allbutt, quoted by Pembrey: Schafer's Physiol. **1**: 808.
22. Davy: Phil. Tr. Roy. Soc. London, 1845, pt. 2, p. 319. Speck: Arch. f. exper. Path. u Pharmakol. **15**: 882. Rumpf: Arch. f. d. ges. Physiol. **33**: 601, 1884. Gley: Compt. rend. Soc. de biol. 1884, p. 265.

as well as afternoon. At the time of the observations the men were stripped and were in a well-heated and ventilated room, quietly waiting their turn for physical examination. (Only 5 per cent. of them gave evidence of acute infection or active tuberculosis.) Bodily surface exposure, as perhaps the only obvious physical basis for the temperature disturbance, should be borne in mind; but its importance is questionable, since its absence in Series 2 did not modify the tendency of the readings. The men naturally presented a fairly uniform mental complex—suspense, mental concern, and unrest.

The rôle of nervous tension in elevating temperature is equally interesting in Series 2. The average

EFFECT OF SUSPENSE AND ANXIETY ON TEMPERATURE*

Series 1:	
Average temperature: 224 men at draft examination, 99.3 F.	
Percentage showing normal temperature	17
Percentage showing subnormal temperature	16
Percentage showing elevated temperature	67
Percentage showing temperature between 99 and 99.5 F.	34
Percentage showing temperature over 99.5 F.	19
Percentage showing temperature over 100 F.	15
Percentage acknowledging acute infection or tuberculosis, or showing physical signs of one or both	0.05

Series 2:	Group A†	Group A Abnormal Deviations	Group B‡	Group B Abnormal Deviations	Variations between Readings Group A	Variations between Readings Group B
Average temperature: first reading	98.9	+0.3	98.7	+0.1		
Average temperature: second reading	98.3	−0.3	98.6	0.0		
Percentage with elevation at first reading	68.0	+0.6	51.0	+0.4		
Percentage with normal at first reading	18.0	0.0	22.0	0.0		
Percentage with depression at first reading	18.0	−0.5	27.0	−0.6		
Percentage with elevation at second reading	25.0	+0.4	41.0	+0.3		
Percentage with normal at second reading	13.0	0.0	17.0	0.0		
Percentage with depression at second reading	60.0	−0.6	34.0	−0.5		
Percentage with rise between readings	18.0	.....	28.0	.....	+0.4	+0.4
Percentage with no change between readings	10.0	.....	19.0	.....	0.0	0.0
Percentage with fall between readings	73.0	.....	53.0	.....	−0.9	−0.4

* The author is well aware of the inaccuracy of the oral thermometer. For more refined physiologic work its unreliability has been demonstrated (Pembrey: Brit. M. J. 1:475 [Feb. 27] 1904). However, the fact remains that it will continue to be the average physician's guide. And, though more desirable, it was quite obviously impracticable in these series to observe rectal temperatures or that of the freshly voided urine. Instead, three minute oral readings were taken, with accurately standardized thermometers, which were carefully shaken down between readings. Special care was taken to place each instrument properly and to see that the lips were kept tightly shut around it.

† Group A consisted of forty nurses. First reading taken before passing out state board questions; second, after completion of the examination.

‡ Group B consisted of ninety nurses. First reading taken during first hour of the examination, that is, after the passing out of the questions and the resultant break of the suspense of anticipation. Second taken during the last hour of the examination.

temperatures for each of the groups showed a most suggestive relation to the time they were taken. For example, before receiving the examination questions, the average elevation was 0.3 degree F.; during the first hour of the examination, it was 0.1 degree F.; during the last hour there was no elevation, and after the examination there was 0.3 degree F. depression. It is reasonable to suppose that with the beginning of the actual work — the expending of pent-up nervous energy, as in question answering—the tension was relieved and the heat regulating mechanism began to reapproach its normal. Furthermore, the relaxation after examination may conceivably have resulted in a general hypotonia sufficient to produce subnormal deviation. It is, after all, primarily a physiologic question whether in both series the psychic state of tension in some way retarded heat dissipation, set the "heat center" at a higher level, or through more direct nervous pathways increased muscle tone or bodily metabolism. The important clinical fact is the obvious result—temperature elevation from apparently psychic, rather than physical, influences.

APPARENT FEVERS

The clinical application of the data is plain. If psychic states can so elevate temperature, it is obvious that such an elevation, plus a diurnal rise, might well simulate a genuine febrile reaction. Fortunately, such an apparent fever would be less likely to mislead the clinician now than formerly. Thanks to the growing tendency of internists to assume the physiologic point of view, it is now not the individual symptom alone, but the entire clinical complex, that governs in making a diagnosis. Nevertheless, in a certain group of cases (for example, incipient pulmonary tuberculosis), paucity of physical signs may render most important the accurate interpretation of the single question of temperature variation. Before sending to the mountains that borderline pulmonary case with the "afternoon fever," the physician must first ascertain that there *is* fever, and that the rise is not merely the aggregate result of the mental state and a normal afternoon increase in metabolism. This is accomplished only by enlisting the individual patient's confidence and carefully and repeatedly determining the temperature at times and under circumstances which, in the particular case, minimize the psychic element.

SUMMARY

1. Physicians are prone so to forget the physiology of heat control that they associate with various temperature curves definite clinical entities, despite the fact that temperature elevation does not necessarily mean fever.

2. Though early work suggested the existence of a special heat center, present evidence is that a complex of bodily factors controls the balance between heat production and heat dissipation, the latter depending largely on cutaneous vasomotor and secretory changes; the former, on variations in muscle tone.

3. Two series of individuals observed by the author, under circumstances associated with considerable nervous tension, showed distinct elevation of temperature in a large percentage of cases, the degree of elevation varying directly with the gravity of the situation facing the individuals.

4. The fact that psychic states can so influence temperature should make the clinician cautious in interpreting apparent febrile reactions when clinical signs are meager. In such cases, a psychic rise plus diurnal elevation may lead to false conclusions, unless the actual physiology of temperature variation and the influencing factors are kept clearly in mind.

ABSTRACT OF DISCUSSION

DR. F. M. POTTENGER, Monrovia, Calif.: This question of temperature is an interesting one to me. If we could get away from the idea that there is an absolute normal, it would help. Of course, there is a near normal, but not an absolute normal. The point in temperature is the difference between heat production and dissipation; 85 per cent. is dissipated through the skin. The vasomotor nerves are under sympathetic control. When a patient comes to me for examina-

tion, I always allow from half a degree to 2 degrees according to the condition of the patient. One cannot deduct anything from the temperature at the time of the first examination because the patient is nervous, anxious and worried and a little elevation of temperature means nothing. There is no doubt that there is a nervous temperature because certain types of nervousness act through the sympathetic nervous system and cause disturbance of the vasomotor system which dissipates the heat. It does not seem to be well known that a temperature elevation preceding menstruation is apt to be greater than following the menstruation. In many women we see a temperature of 99 F. for the days before menstruation and a drop immediately after. I think we have done harm in depending on temperature elevation for a diagnosis in tuberculosis work. Dr. Wynn's work is interesting and suggestive. The men in the tin mines of Cornwall work in four hour shifts because they work at a temperature of 102 to 104 F. Any one who plays tennis in the hot sun will find that his temperature goes up to 102 F., but it is physiologic and dilatation of the peripheral vessels soon follows. If an individual has not control of the peripheral vessels, his temperature will not fall soon.

DR. EMANUEL LIBMAN, New York: The question that Dr. Wynn has brought up is one of great importance because there are quite a number of causes of febrile action without a focus of infection. Rise of temperature can be produced by disturbance of the ductless glands, by cerebral causes or by disturbances of the sympathetic nervous system; from pressure on the liver; in embolism without bacteria; injecting salt solution into the blood stream, which causes a hemolysis and rise in temperature; plugging of the ureter by an aseptic stone. I have had two such instances where the culture behind the stone was absolutely sterile. Dr. Pottenger referred to menstrual temperature. I have seen not only gradual rise of temperature before the menstrual period but a chill. One patient was operated on for appendicitis and no appendicitis was found. Thyroid disease may elevate the temperature. It is not generally known that women may have elevation of temperature off and on for years caused by ductless gland disturbance. In the whole group of erythemas described by Osler there is temperature elevation. In cases of cerebrospinal meningitis, after the meningitis has run its course and only scar tissue remains at the base, the patient has a high temperature without any infection being present. After lumbar puncture the temperature may rise, without infection. I know one case in which such an elevation persisted for one week. There is no doubt that in Dr. Wynn's cases there was excitement. It is necessary to exclude tuberculosis and to exclude infections in the sinuses.

DR. H. S. PLUMMER, Rochester, Minn.: Temperature regulation is an equilibrium between heat production and heat elimination. It is a question of heat elimination and not of heat production. If you do not disturb heat elimination, heat production can go up enormously. We see temperature elevation in hyperthyroidism, but this fact shows how well the body is able to take care of heat production when the elimination is perfect.

DR. FENTON B. TURCK, New York: This is a physiologic question which is subject to experimental methods, and does not require clinical guessing. I introduced thermometers into the stomach and into the bowel; I placed them on the skin. Then interrupting the circulation in the leg caused autolysis and by massaging the leg a drop in the temperature took place. When autolyzed tissue reaches the circulation the reaction against it causes the rise in temperature. Many diseases are produced by autolysis of the tissues. By means of antibodies you can immediately increase the temperature and restore it to normal by these biologic methods.

DR. GEORGE D. HEAD, Minneapolis: It seems to me that in a number of these subjects we have been reasoning in a circle. All the observations with regard to temperature on so-called normal men have not been controlled as carefully as they ought to have been. Our experience in the war clearly proved that many of our young men after repeated examinations by local boards and by our best specialists were inducted into service harboring a concealed form of some infection, a tuberculous infection, in the large percentage of cases. At Camp Devens we were astonished at the large number of men returning to this country from France with active tuberculosis. No matter how well a man may look or how well he may feel, if you are going to make any scientific observations with relation to temperature elevation, you must first determine whether they are tuberculous. There is one of the defects in our observations with relation to temperature elevations in so-called normal persons. How do you know that they are normal? I protest against calling these men neurotics or circulatory asthenics or effort syndrome until we know whether they are normal.

DR. EDWARD F. WELLS, Chicago: I was a member of one of the advisory boards of Chicago. One of our boards sent a number of draftees to us with temperatures from 99.5 to 102 F. Many of these young men showed no evidences of local infection but they had a temperature elevation which could scarcely have been of psychic origin because in each instance we saw them three times. The inference was that there was some local infection.

DR. FRANK B. WYNN, Indianapolis: I agree with Dr. Turck that the factor back of it all is biochemical in nature, but the contention of my paper is whether the etiologic factor causing this change was one of suspense and anxiety in entering the service. There was a nervous and muscular hypertonus, the equivalent of muscular exercise, increasing metabolism in the body, and as a result I think there was a biologic change. Primarily, however, it was a psychic factor.

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF PYLORIC ULCER PERFORATED DURING FIRST WEEK AFTER GASTRO-ENTEROSTOMY

EARL I. CARR, M.D., LANSING, MICH.

I desire to report a disastrous occurrence which unexpectedly took place in a case which seemed to be one of a common class, in which cure is expected and in which it would seem that a fatality could occur only because of error or lapse in technic. However commonly this occurs, I think it is not frequently recognized, and I feel that attention should be called to this possible accident.

HISTORY OF CASE

April 12, 1919, W. J. W., aged 40, machinist, came to me complaining of stomach trouble which had existed intermittently for fifteen or sixteen years. His family history was negative. He stated that he had never been seriously ill except for scarlet fever in childhood, and had never had any physical trouble except that for which he came. The present trouble, which had been an annoyance for many years and had caused him to choose his diet carefully at times, had not presented a serious aspect until within a few months, during which time his loss in weight had amounted to about 10 pounds. A dull, nagging pain in the epigastrium had interfered with thought and work and had caused him to decide to have a thorough investigation and to be willing to submit to any necessary treatment. The distress he experienced a short time after eating he described in classical fashion, but he did not give a history of having vomited or of having passed black stools. He had been greatly constipated of late.

Examination revealed a slender man weighing 125 pounds, 69 inches tall, with small panniculus and normal color, and with an anxious expression. The nose, throat and chest were negative. There was a sore spot which the patient could pick out with one finger in the epigastrium near the center. The abdomen was scaphoid and the musculature tense. Fluoroscopic examination six hours after the last barium meal showed a 25 per cent. stomach residue; a dilated duodenum, which seemed to contain the sore spot; ileac stasis; free colon, and the appendix not tender and not filled. The Wassermann was negative and the urine normal.

TREATMENT

He was operated on, April 17. An indurated ulcer about the size of a large hickory nut, with a crater which would just admit the tip of the index finger, was found in the anterior side of the pylorus. There was firm scar tissue about the base but no adhesions to the base; there was no suggestion, even, of impending perforation. The appendix was fibroid. A low posterior gastrojejunostomy and appendectomy were done under nitrous oxid anesthesia. The patient was returned to bed in good condition, and the usual postoperative treatment was followed. Proctoclysis was instituted, and the liquid was retained. For slight nausea and sense of fulness the patient was given a lavage on several occasions, and the washings showed bile but no blood. His progress was considered fairly normal until the sixth day, when the patient's expression changed and he became restless. He vomited on that day, and a lavage was done, the washings, which were completely recovered, containing bile. On the seventh day the circulation was impaired, and later in the day the patient died. A necropsy revealed the gastrojejunostomy wound to be completely healed. The induration about the ulcer had subsided to one half its former size, and the base was perforated, the diameter of the perforation being equal to that of an ordinary lead pencil. There was suppurative peritonitis.

Just when this perforation occurred I do not know. Thinking over the case, I can recall no time that can be decided on as the time of perforation. This condition of the patient on the sixth day suggested peritonitis, and on the seventh day that diagnosis seemed certain, but from an undetermined cause. That the patient's condition was critical became apparent only a few hours before his death, and not until investigation was regarded as out of the question.

EXAMINATION FOR PLASMODIA

J. W. TORBETT, M.D., MARLIN, TEXAS

I have noticed for years that patients with latent malaria often, after a hot bath, are taken with a chill and fever. For more than a year it has been our custom to have all patients suspected of having malaria take a hot blanket pack with hot fomentations over the spleen and liver one-half hour before the blood is taken for examination. Plasmodia can be found in many such cases otherwise negative.

Open Safety Pin Passes Through Baby.—Dr. W. F. Doolittle, Cleveland, writes: March 30, Harriet B., a nursing infant, put into her mouth an ordinary tin-tipped safety pin 1⅛ inches long. The mother tried to reach it by inserting her finger, but the child gulped the open pin down backward without seeming to be distressed. Roentgenographic examination disclosed the pin lodged in the stomach and open at an angle of 20 degrees. The pointed portion was downward and directed toward the pylorus. As no disturbing symptoms were apparent, and especially on account of the delicate age of the infant (8½ months), it was decided not to risk an operation, but to follow, at least temporarily, an expectant plan of treatment. The nursing babe was started on well-cooked oatmeal, mashed potato, bits of softened bread, etc., in addition to the breast feedings, with the idea of their bulking about the pin and assisting its passage. A little powdered slippery-elm was daily mixed with the food as a mild demulcent, selected as least likely to cause too vigorous peristaltic action of the bowel. The parents were directed to screen each stool carefully and report promptly anything unusual in the child's condition. The patient continued to show no signs of distress, but thrived on the mixed diet so that a marked facial eczema due to exudative diathesis became quite cleared up. Another roentgenographic examination, May 1, revealed the pin as still in the stomach, but with its back now toward the pylorus. There were no disturbing symptoms, and the mode of treatment was continued. Just two weeks later the pin passed the anus uneventfully.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CHLORCOSANE (See New and Nonofficial Remedies, 1919, p. 137).

Chlorcosane (McNeil).—A brand of chlorcosane containing from 35 to 40 per cent. of chlorine in stable (nonactive) combination.

Manufactured by Robert McNeil, Philadelphia, Pa. No U. S. patent or trademark.

When assayed by the Carius method chlorcosane (McNeil) contains from 35 to 40 per cent. of chlorine.

DICHLORAMINE-T (See New and Nonofficial Remedies, 1919, p. 138).

Dichloramine-T (McNeil).—A brand of dichloramine-T complying with the N. N. R. standards.

Manufactured by Robert McNeil, Philadelphia, Pa. No U. S. patent or trademark.

Pituitary Solution-Abbott.—Liquor Hypophysis, U. S. P.—A sterilized solution of the water soluble extract of the posterior portion of the pituitary glands of cattle. It is free from chemical preservatives. It is standardized according to the method of Roth (Bulletin 100, Hygienic Laboratory, U. S. P. H. S.).

Actions and Uses.—See New and Nonofficial Remedies, 1919, p. 204.

Dosage.—From 0.5 to 1 Cc. to be injected intramuscularly or subcutaneously. May be increased or diminished according to indications.

Manufactured by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Ampules Pituitary Solution-Abbott, 0.5 Cc.—Each ampule contains pituitary solution-Abbott 0.5 Cc.

Ampules Pituitary Solution-Abbott, 1 Cc.—Each ampule contains pituitary solution-Abbott 1 Cc.

Posterior lobes of the pituitary body of cattle are finely minced, extracted with slightly acidulated water, the solution boiled for ten minutes and filtered. The resulting extract is sterilized and then adjusted so as to correspond with the Pharmacopoeia standard.

Pituitary solution-Abbott is a transparent liquid, colorless and having a faint characteristic odor.

Pituitary Extract-Lederle.—A sterile solution containing the active principle of the posterior lobe of the pituitary body. It is physiologically standardized according to the method of Roth (Bulletin 100, Hygienic Laboratory, U. S. P. H. S.).

Actions and Uses.—See New and Nonofficial Remedies, 1919, p. 204.

Dosage.—Usually 0.5 to 2 Cc. intramuscularly, cautiously increased if necessary.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Ampuls Pituitary Extract-Lederle, 0.5 Cc.—Each ampule contains pituitary extract-Lederle, 0.5 Cc.

Ampuls Pituitary Extract-Lederle, 1 Cc.—Each ampule contains pituitary extract-Lederle, 1 Cc.

Posterior lobes of the pituitary body of cattle are extracted with water slightly acidulated with hydrochloric acid, and containing a little camphor. The extract is standardized and filtered into ampules.

Pituitary extract-Lederle is a clear, almost colorless solution having a faint characteristic odor.

It is standardized so that 1 Cc. of the solution diluted 20,000 times is equal in activity to a 1:20,000,000 dilution of betaiminazolylethylamine hydrochloride when the isolated uterus of the virgin guinea-pig is used.

ANTIDYSENTERIC SERUM (See N. N. R., 1919, p. 269, and THE JOURNAL, April 19, 1919, p. 1136).

Lederle Antitoxin Laboratories, New York.

Antidysenteric Serum (Polyvalent).—Marketed also in syringes containing 50 Cc. each with sterile needle.

STREPTOCOCCUS VACCINE (See N. N. R., 1919, p. 291, and THE JOURNAL, April 19, 1919, p. 1136).

Lederle Antitoxin Laboratories, New York.

Streptococcus Vaccine (Polyvalent).—Marketed also in 10 Cc. and 20 Cc. vials; in packages of four 1-Cc. vials containing, respectively, 50, 100, 200 and 400 million killed streptococci; and in packages of four syringes containing, respectively, 50, 100, 200 and 400 million killed streptococci.

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SATURDAY, JULY 5, 1919

BREAD AND BRAN

The question of the physiologically preferable mode of milling wheat cannot be regarded as a new problem raised by the war. It is an old issue which was brought anew into prominence by the shortage of bread grains throughout the countries whose food supplies were directly menaced by the great conflict. Every bread-eating nation clings to bread as long as possible. The immense significance of this fact is emphasized by the official estimate of the part which wheat plays in the dietary of the American people. Thus it is stated[1] that, excluding the widely consumed breakfast foods, macaroni, spaghetti and similar products, and referring only to the three common flours, patent, entire and graham, they supply one fifth of the protein and one quarter of the carbohydrate of the average dietary. The government specialists remind us that in times of stress even greater reliance is placed on bread, and it is a matter of repeated observation that those of relatively small incomes tend to make bread a predominating portion of the diet. If we are short of bread grains, says Taylor,[2] we must modify our bread. In case of a very great shortage, other cereals must be substituted for bread.

In the most common modern milling processes the germ, together with a large portion of the outer layers of the wheat kernel, is removed. The removal of the germ which contains practically all of the wheat fat or oil lowers the energy value somewhat but improves the keeping quality of the flour. Our standard wheat flour represents less than 75 per cent. of the original weight of the cereal grains from which it was prepared. The remainder appears in the trade as grain offal or millfeed, and is chiefly used as a protein concentrate in the feeding of live stock, especially dairy cattle. In this way the fraction of the wheat not directly eaten by man is nevertheless converted indirectly through the medium of animal feeding into food fit for human consumption.

There is a widespread belief that the highly milled flour, which has lost some of the protein and the vitamins of the original wheat kernel contained in the outer layers of the latter, is less nutritious on that account. Against this may be arrayed the argument that bread made from wheat flour including the whole of the wheat germ (graham flour) or a part of it (entire wheat flour) and the outer layers of the kernel has a lowered digestibility, particularly in the case of the protein. Obviously any gain in energy-producing elements or in protein in a richer initial product may be more than offset by the failure of the human alimentary apparatus to utilize it. From a careful review of the experimental literature on this subject a government expert in the U. S. Department of Agriculture has reached the following conclusion:

> The results of numerous studies conducted both in this country and abroad to determine the digestibility of wheat flours containing little, if any, bran as compared with the digestibility of flours containing all the bran normally present in the grain show that the protein and carbohydrate of flours from which the bran has been largely removed is more completely utilized by the human body than the protein and carbohydrate of flours prepared from the whole grain.[3]

Since vitamins are available in abundance in many types of foods other than the cereal grains, the removal of this category of food factors from wheat through milling need not become a matter of serious concern unless the dietary becomes exceedingly restricted in respect to the sources of its nutrients. It is, of course, readily conceivable that an enforced ration of highly milled cereals, meat, vegetable fats and sugars may lead to malnutrition. For example, Chick and Hume[4] have reported that among groups of people living on restricted diets in which bread made from patent flour formed a large proportion of the total ration, beriberi was very common; whereas people living on similar diets, but with bread made from the entire kernel replacing that made from patent flour, were rarely affected. The food habits of most persons living amid a liberal variety of dietary opportunities are such that under ordinary circumstances deficiency disease as a result of the use of highly milled cereal is scarcely to be feared.

What shall be said of the bran factor in the relative digestibility of different grades of flour? The widespread use of wheat bran as a laxative is based on the assumption of the comparative indigestibility of this portion of the grain despite its admitted richness in protein. Strangely enough there are few, if any, accurate data from human subjects regarding the actual degree of utilization of wheat bran apart from its inclusion in flour. Hence we welcome the new report on this subject[3] from the Office of Home Economics in the U. S. Department of Agriculture. The results of tests with fine bran indicate that the protein supplied by the bran was 45 per cent. and the bran car-

1. U. S. Department of Agriculture, Office Experiment Stations, Circular 110, 1911, p. 26.
2. Taylor, A. E.: War Bread, 1918.
3. Holmes, A. D.: Experiments on the Digestibility of Wheat Bran in a Diet Without Wheat Flour, U. S. Department of Agriculture, Bull. 751, 1919.
4. Chick, H., and Hume, M.: Tr. Soc. Trop. Med. and Hyg. 10: 141, 1916-1917; Proc. Roy. M. & Chir. Soc. London, Series B 90: 44, 60, 1917.

bohydrate was 57 per cent. digested, while the results of the tests with coarse bran indicate a digestibility of 28 per cent. for the bran protein and 56 per cent. for the bran carbohydrate. This tallies with the statement of Pannwitz,[5] who found that the protein of fine rye bran was 44 per cent. digested. Although the extreme comminution of the bran which supposedly renders the hard particles more pervious to the alimentary digestive juices improves its digestibility somewhat, even in this most advantageous physical form the outer layers of the wheat kernel are at best poorly utilized. The quantities of bran eaten were large; and Holmes,[3] who conducted the experiments, reports, as might be expected, that the amount of feces voided by the subjects during the tests was larger than normal. This condition was noted by all the subjects regardless as to whether they were of active, athletic or sedentary habits. Some of the subjects found the bran diets decidedly laxative. Little, if any, difference was noted by the subjects as a whole between the laxative effects of the fine and of the coarse brans.

Another feature associated with the presence of an abundance of bran in the diet is clearly brought out by the government digestion experiments. The "coefficients of digestibility" of the other nutrients—the fats and carbohydrates of the diet—are somewhat diminished by the presence of the bran in the ration. In explanation of this altered utilization of the entire diet it is suggested that the bran may stimulate peristaltic action to such an extent that the food materials are not as completely absorbed as is normally the case when they pass through the alimentary tract without increased peristalsis. In any event, we now know more definitely than hitherto what becomes of bran in the diet and how it influences the fate of the constituents of the ration during their alimentary sojourn in the body.

PHYSICAL EXERCISE AND PHYSIOLOGIC FITNESS

Enthusiasm for an end or object that is unquestionably good sometimes defeats its own purpose by encouraging extremes of performance which damage rather than improve. This has doubtless often been true of athletics. Pursued ostensibly to promote personal welfare, physical exercise is not infrequently carried to a point of overdoing which results in ultimate injury rather than benefit.

At the present time the value of exercise in the development of good physique is being menaced, we fear, by the extreme claims of propagandists whose chief aim is to exploit the physical unfitness of the average American business man for their own personal advantage. Widely advertised systems of exercise, gymnasiums for the "busy man," physical training "institutes," and work-to-be-fit wonders have become part of an organized commercial effort to "save" the lethargic American gentleman.

Possibly many of these schemes represent a wholesome beneficial influence. A serious difficulty lies in the lack of suitable criteria as to the benefits derived; or rather in the failure to recognize where the limitations of muscular effort lie for the untrained. Perhaps some index will be found in the recent studies on aviators. In an address before the Harvey Society, Henderson[1] pointed to the increasing frequency among aviators of a condition of "air-staleness." This is described as the effect of repeated slight oxygen deficiency of a person who does not become acclimatized. It is a condition, Henderson says, closely similar to, perhaps identical with, "overtraining" or staleness, the physical and nervous impairment of athletes.

The Manual of the Medical Research Laboratory of the War Department's Air Service states that the ability to endure comfortably and well high altitudes is dependent on the ease and quickness with which the adaptive responses in the breathing, the blood and the circulation take place. An explanation of the difference in reaction observed among the members of a group of men when at a high altitude is to be found in the degree of individual, physical fitness. In persons damaged by disease, overwork, unhygienic living, or weakened by inactivity and by loss of sleep, the power of adjustment is as a rule below par. The normal equilibrium of the body is so nicely adjusted that under usual conditions the physiologic balance is largely maintained by adjustments that are made with little or no expenditure of energy. There is a certain range of greater or less breadth through which the external factors of the environment may be varied and yet be met by an automatic adjustment of the physiologic processes in the body which will preserve the vital balance of the mechanism. But beyond a certain point, specific for each organism, changes in the external conditions will necessitate more radical alterations which will tax the compensating mechanisms to the utmost capacity in order to prevent disaster. Theoretically the organism which has been called on repeatedly to make a certain kind of adjustment will be the one most capable of responding when an extraordinary demand is made.

Translating these observations from the new physiology of aviation to the physiology of training for fitness in everyday life, we are probably justified in concluding that the test of exercise as a beneficent performance lies in the physiologic adjustments that it induces. If the heart reduces its rate of beating and is less sensitive to moderate exertion, the training is commendable. Training should make the heart and other muscles work better and endure fatiguing exercises better than the untrained heart does. Conse-

5. Pannwitz: Nährwerth des Soldatenbrotes, Inaug. Diss., Berlin, 1898, p. 100.

1. Henderson, Y.: The Physiology of the Aviator, Science, May 9, 1919, p. 431.

quently, if the heart reacts excessively as a result of work; if there is a rapid rise in pulse rate which returns only after a long interval to its normal, the fundamental aim of exercise for health has not been accomplished. The symptoms of an overtaxed mechanism are at hand. However advantageous vigorous training may be in the great majority of cases, failure to adjust to the increased demands of work is always a signal to desist and an indication that other modes of perfecting the organism should be sought.

TISSUE POISONS IN THE GENESIS OF SHOCK

A biologist recently remarked that our laboratories resemble "up-to-date shops for quantity production of fabricated hypotheses"—that they are full of fashions and go from one extreme to another. A reviewer of the literature on shock might well have the same conviction. Shock, like many other pathologic phenomena, is the result of an interplay of numerous agencies which may be initiated in different ways. One observer centers his attention on some particular factor in the community of causes while he notes the familiar end-result. Another person concentrates his interest on a different link in the chain of events to which he, in turn, assigns the cause for the identical final occurrence. The symptomatic similarity is obvious to all. The confusion of etiologic standpoints has been caused by the narrowness of vision.

Despite the steady succession of rejected theories of shock, we must not despair of obtaining sooner or later a clearer conception of the underlying pathology. It is a distinct step in advance to be able to assert what shock is not. The nervous system has been relegated to an inferior rôle, at best, in the newer attempts at an explanation. It would seem that the theory of fat embolism as a prominent predisposing cause may also be set aside[1] as secondary in moment. At present greater interest is being centered in certain chemical factors which may underlie many, if not all, types of shock. To understand their possible significance we must recall the now admitted underlying manifestations. Circulatory collapse may occur in spite of arterial constriction; in this a diminution of the output of the heart is a prominent factor, if not the sole cause. Such fall of the cardiac output occurs almost invariably, however, without any considerable impairment of the activity of the heart. It is not a primary failure of this organ. The systolic output fails because the diastolic filling is inadequate. The arterial blood has lost in volume and is not to be found accumulated in the heart or great veins; but it finds its way into the peripheral vessels of the abdominal viscera and skeletal muscles. An added feature, long recognized and described as a characteristic feature of shock, is the fall of effective blood volume due to the loss of plasma. As the fluid leaves the blood, the corpuscular content consequently increases.

In studying the action of histamin, which produces symptoms resembling in many ways those of traumatic and surgical shock, Dale and Laidlaw[2] call attention to the characteristic features. There is an oligemia, partly due to passage of plasma out of the blood vessels, partly to retardation of the flow of blood at the periphery. They believe the evidence to favor the view that this is due to a general loss of tone by the capillaries throughout the body. The excessive permeability of these vessels, which allows escape of plasma, is regarded as a further stage of the same type of action. Histamin applied locally in very small doses causes redness, swelling and the formation of an edematous wheal.[3] Dale and Laidlaw make the interesting comment, in relation to such mild inflammatory reactions to a chemical substance, that the widening of the capillary lumina, the opening up of channels normally empty, the transudation of plasma through abnormally permeable endothelium, and the tendency to stasis of the concentrated blood—these phenomena, when occurring in an area so restricted that the general arterial pressure is not materially affected, will produce the familiar sequence of redness, swelling and edema. Large doses, on the other hand, produce something more than local effects. The circulatory collapse may be regarded as the outcome of a more widespread poisoning of the capillary endothelium depending on the mode of application or the magnitude of the dose.

According to the view just mentioned, certain chemical substances can thus be responsible for either local inflammation and edema or the more widespread circulatory collapses seen in shock. Histamin is a compound with which both sorts of phenomena can be effected. If we conceive of the liberation of a comparable substance into the circulation as the result of tissue injury (traumatic toxemia) or damage to viscera (surgical shock), an analogy is promptly afforded. Anaphylactic shock may be interpreted, on this hypothesis, to be the outcome of physical changes in endothelial cells leading to relaxation of their tone and ultimately to abnormal permeability. The shock-like symptoms occasionally following administration of arsphenamin may also depend on an acute endothelial intoxication. The common factors in all the cases are a poison and an altered capillary permeability. Whether and how such endogenous poisons actually enter the circulation remains to be demonstrated. At any rate our attention is temporarily diverted from the nervous system to the blood vessels and chemical agencies in the attempt to elucidate the genesis of shock.

1. Shock and Fat Embolism, Current Comment, J. A. M. A. 72: 1848 (June 21) 1919.

2. Dale, H. H., and Laidlaw, P. P.: Histamine Shock, J. Physiol. 52: 355, 1919.

3. Sollmann and Pilcher: J. Pharmacol. & Exper. Therap. 9: 309 (March) 1917.

Current Comment

THE NEW INDUSTRIAL PHYSIOLOGY

The necessity of conserving the health of the working man and woman has long been regarded as a part of the public health program. The recognition of certain diseases as indisputably occupational has resulted in establishing corresponding schemes of vocational hygiene. The well-being of the worker has been the keynote of such endeavors. The measures instituted have tended toward the elimination of accident and other health hazards in the trades. The problems have been approached from medical, social and, in lesser degree, economic points of view. Protective legislation and education have paved the way for progress. The war, which has called for unexpected speeding up of industrial performances in many fields of production, has emphasized a somewhat different feature of the human machine. In order to be in a position to work efficiently, in the industrial sense, not only health and strength must be conserved but the physiologic mechanism must also be allowed to act to the best advantage. Fatigue factors must be taken into account in relation to the output of work as well as to the conservation of the health of the worker. The needs and limitations of an intricate combination of living organs and tissues with their chemical and nervous regulations must be taken into account. These newer physiologic aspects of industrial activity have created problems for study to which Lee[1] has given the name "industrial physiology." By this is designated "the sum of knowledge pertaining to the working of the human mechanism in industrial activity, and it thus includes psychological phenomena as well as those more technically recognized as physiological." We may expect to hear much more in the near future of the new studies which have as their object the scientific need of learning how the industrial worker actually performs his work and what the conditions are under which he can work most efficiently and can produce the largest output, while at the same time maintaining his body in health and in the best working condition. The practical objects of industrial physiology are to establish in all working places the conditions which conduce at the same time to the maximum output and the maintenance of the maximum power of the worker.

THE PRODUCTION OF MEDICINAL PLANTS IN THE UNITED STATES

Under the stimulus of war-time needs there was a revival and an extension of backyard gardening in the United States. Neglected plots of land were cultivated and made to yield some contribution to the country's store of food. No one can estimate with any accuracy what the extent of this production was, but it undoubtedly represented a considerable increment to the food supply and a wholesome addition to the variety of diet under times of stringency in the food market. This impetus to individual gardening will probably continue to produce results for some years to come. Stimulated by a heralded shortage of medicinal plants, suggestions have occasionally been made toward the augmentation of the supply of botanical drugs by similar modes of individual effort. Cushman[1] has, however, sounded a warning relative to this laudable ambition. The production of medicinal herbs in America, he asserts, depends largely on the labor cost, and can be made a profitable enterprise only when it is conducted on a scientific basis and on a sufficiently large scale to absorb the high cost of labor involved in the tilling, planting, cultivating, harvesting, curing and packing operations. At the same time, the drug grower faces an uncertain and precarious market for his wares, for, although his drug plants are needed, the need is strictly limited, and the slightest overproduction is either entirely unsalable or salable at a price less than the cost of production. But this is not the only obstacle to individual initiative on the part of uninformed growers. Crude botanical drugs must meet certain pharmacopeial standards that involve special chemical or biologic tests. Cushman asserts that unless a producer is able to hold his belladonna to an assay at least twice as strong as the U. S. P. requirement, it would not be worth producing at all under American conditions. Crude drugs of such high potency can be obtained only by the application of trained scientific knowledge to the problem. To the extent that the growing of medicinal plants is to become an agricultural feat rather than the haphazard gathering of wild forms, scientific considerations must go hand in hand with the practical procedures.

HONORARY DEGREES IN PUBLIC HEALTH

THE JOURNAL has already commented on the encouraging tendency to standardize degrees in public health work that is being manifested by several universities interested in the training of various kinds of public health experts.[2] It hardly needs argument to convince one that if, as is highly desirable, certificates and degrees in public health are to be regarded as necessary prerequisites to official positions, then a considerable measure of uniformity in training and experience must be correlated with the holding of a specific degree. This is generally recognized by the teachers in public health work in this country. It is somewhat disquieting, therefore, to find that certain educational institutions are conferring an "honorary" degree with exactly the same titles—such as doctor of public health—that are elsewhere given only for a comprehensive course of study and research. It is evident that, unless this practice can be checked, hopeless confusion will result in the public mind as to the real significance of degrees in public health. One reason why the Ph.D. degree has so high a standing in our educational system is that it is never given as an honorary degree by any reputable university. Unless degrees in public health can be made to stand likewise for definite academic training and achievement, it is

1. Lee, F. S.: The New Science of Industrial Physiology, Pub. Health Rep. 34:723, 1919; this issue, page 37.

1. Cushman, A. S.: Growing Medicinal Plants in America, J. Heredity 10:32 (Jan.) 1919.

2. Standardization of Degrees in Public Health, Current Comment, J. A. M. A. 72:941 (March 29) 1919.

plain to see what fate will overtake them. If honorary degrees are to be given in public health, they should have a specific and unambiguous nomenclature. Meritorious public health workers should accept no other.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending June 27, there were 13,144 officers in the Medical Corps, a decrease of 321 from the previous week. The Medical Corps contained 2,715 officers. The total number of physicians discharged since the beginning of the war is 19,097. The records of the discharge branch of the general staff show the following discharges of officers of the Medical Department from Nov. 15, 1918, to noon, June 26, 1919: 2 brigadier-generals, 55 colonels, 404 lieutenant-colonels, 1,994 majors, 8,023 captains, 9,952 lieutenants, making a total of 20,430 officers discharged to date. Nov. 15, 1918, there were 30,591 medical officers on duty; June 26, 1919, there were 10,161 officers on duty in the Medical Corps.

Appointments in Army Medical Service

Col. Walter D. McCaw and Lieut.-Col. Robert E. Noble, both of the Medical Corps, have been recommended by the President to the senate for appointment as assistant surgeon-generals with the rank of brigadier-general in the medical department of the United States Army, from March 5, 1919. The senate has not yet acted on these recommendations but will do so in executive session shortly. The following officers, now first lieutenants in the Medical Officers' Reserve Corps, have been recommeded by the President for appointment as first lieutenants in the Medical Corps of the Regular Army: Earl Hazelton Hare, Robert Effinger Cumming, Thomas Mathew Calladine, Jr., William Davis Gill, Harvey David Thornburg, Charles Smith Moss and Irwin Bradfield Smock. These recommendations are now before the senate and will be acted on shortly.

Retirement of Members of the Nurse Corps

A bill authorizing the retirement of members of the Army Nurse Corps (female) has been introduced by Congressman Julius Kahn of California, chairman of the House Committee on Military Affairs. The measure provides that members of the Army Nurse Corps who have had active service therein for twenty years, including time served as contract nurses, shall on application to the Secretary of War, be placed on a retired list and shall thereafter receive 75 per cent of the pay, exclusive of foreign-service pay, which they were drawing at the time they became entitled to retirement on completion of the required twenty years' active service. As the author of this bill is chairman of the military committee of the house, it is expected that he will get early and favorable action on it.

Recognition of Members of Draft Boards

Suitable recognition for members of the medical advisory draft boards is provided for in three measures recently introduced in Congress. A bill introduced by Senator Henderson of Nevada authorizes the President to award brevet commissions and suitable medals to the physicians who assist in the draft. Senator Randall of Louisiana has introduced a similar measure, as has Congressman Kahn of California, but the Randall and Kahn measures do not provide brevet commissions. In addition to appropriate medals, the thanks of Congress are extended. It is fully expected that one of these measures will be passed at this session, but it is not believed likely that brevet commissions will be favored.

Bill to Provide Hospital Care for Government Employees

All Army and Navy hospitals would be open to civilian employees of the government when the employees are suffering with tuberculosis, under the terms of a bill introduced by Senator Sheppard of Texas.

Organization for Providing Scholarships in American Universities for French Students

Major Leonard D. Frescoln, now at the Besancon University in France, writes that, at the completion of their courses, a number of delegates from the fourteen universities of France, attended a meeting in Paris, May 28, and as an expression of thanks for the interesting work given to the American soldiers in French universities, it was agreed to found fourteen scholarships, enabling fourteen Frenchmen to study for one year in America.

Army Surgeons Decorated

JAMES H. KEELING, Captain, M. C., U. S. Army, Albany, N. Y., who has been on duty with the British Forces for twenty-one months, has been decorated twice by the king.

HARVEY FRASER, West Salem, Wis., has been awarded the Italian Distinguished Service Medal for work overseas.

Colonel Seaman Cited

GILBERT E. SEAMAN, Colonel, M. C., U. S. Army, Milwaukee, formerly chief surgeon of the Thirty-Second Division, has received a personal letter from General Pershing commending him for his work as division surgeon overseas, and expressing his appreciation of the valuable services rendered to the American Expeditionary Forces as division surgeon and later as corps surgeon of the Sixth Army Corps.

Awards of Distinguished Service Medal

The distinguished service medal has been awarded by the commanding general, American Expeditionary Forces, to the following named British and French civilians:

DOCTEUR COUSSERGUE. For exceptionally meritorious and distinguished services. As médecin régulateur at St. Dizier he rendered the American Expeditionary Forces valuable service in making possible the evacuation of the forward areas during the St. Mihiel and Argonne offensives. When the number of American hospital trains available were found insufficient, he placed at our disposition the facilities of the French, laboring personally, day and night, in order that there might be no interruption of the service.

M. MOURIER. For exceptionally meritorious and distinguished services. As a member of the French government and the civilian chief of the Medical Department of the French Army, he placed all available of his great department, both in material and personnel, at the disposal of the American Expeditionary Forces. His advice was of great value, aiding us in the solution of many problems, and he rendered services of inestimable value in assisting us in securing proper evacuation and hospitalization for the sick and wounded.

The distinguished service medal has been awarded by the commanding general, American Expeditionary Forces, to the following named officers of the American Expeditionary Forces:

WILLIAM J. CROOKSTON, Colonel, Medical Corps, United States Army, Pittsburgh, Pa. For exceptionally meritorious and distinguished services. As division surgeon he displayed marked ability of organization and administration throughout the service of the Twenty-Eighth Division in France. With keen judgment he supervised the location of dressing stations and field hospital and used remarkable discretion in directing the entire work of evacuation of a large number of casualties. By constant vigilance and unceasing effort he provided for the health and treatment of the troops with whom he served, displaying professional attainments of a high order.

WILLIAM L. KELLER, Colonel, Medical Corps, United States Army. For exceptionally meritorious and distinguished services. As director of the professional services, Medical Department, American Expeditionary Forces, he displayed marked ability in the organization and assignment of the forces at his disposal for hospital at the front and in the rear areas. He was discerning in his knowledge of conditions, using his insufficient personnel to the maximum advantage in relieving the suffering of our sick and wounded, and in obtaining prompt treatment for battle casualties. His comprehensive grasp of the problems which presented themselves resulted in the saving of many lives.

THOMAS L. RHOADES, Colonel, Medical Corps, United States Army. For exceptionally meritorious and distinguished services. As division surgeon of the Eightieth Division, he had charge of the Medical Department's work of that unit throughout its combat activities. Due to his skilful administration, it functioned smoothly and with precision at all times, caring promptly for a large number of the sick and wounded. As chief surgeon of the First Corps, and later of the First Army, he displayed executive ability of high order, being constant and zealous in devotion to his arduous tasks.

ALBERT P. CLARK, Lieutenant-Colonel, Medical Corps, United States Army. For exceptionally meritorious and distinguished services. As medical representative on, and later as General Staff member of, the first section, General Headquarters, American Expeditionary Forces, he displayed sound judgment and wide comprehension of existing conditions in the management of ocean tonnage allotments, and devised

and efficiently operated a system of supply for the Medical Department of the American Expeditionary Forces. Largely through his personal efforts, energy and farsightedness the difficulties in the procurement and shipment of medical supplies for the sick and wounded were successfully overcome.

JOSEPH F. SILER, Colonel, Medical Corps, United States Army. For exceptionally meritorious and distinguished services. He has been in charge of the Laboratory Service of the American Expeditionary Forces. Due to his untiring zeal and professional attainments, he has been able to render invaluable service in the prevention of the spread of infectious disease among our troops. Under his valuable instructions, medical officers were sent out equipped to handle the new medical and surgical problems of war in a manner not believed possible before the present war.

JAMES D. FIFE, Colonel, United States Army. For exceptionally meritorious and distinguished services. In command of Base Hospital No. 21, he served with distinction with the British Expeditionary Forces. He was later assigned to duty in the office of the chief surgeon in charge of hospital planning and construction, procurement of permanent buildings, establishment of hospitalization, liason with the French authorities, the General Staff and with the Engineers. In the performance of these multifarious duties he displayed conspicuous ability.

A. PIATT ANDREW, Lieutenant-Colonel United States Army. For exceptionally meritorious and distinguished services. Coming to France at the beginning of the war, he showed remarkable ability in organizing the American Field Service, a volunteer service for the transportation of the wounded of the French armies at the front. On entry of the United States into the war, he turned over the efficient organization he had built to the United States Army Ambulance Service, and by his sound judgment and expert advice rendered invaluable aid in the organization of that organization. To him is due in a large measure, the credit for the increasingly valuable work done by the light ambulances at the front.

JOSEPH M. FLINT, Lieutenant-Colonel, Medical Corps, United States Army, New Haven, Conn. For exceptionally meritorious and distinguished services. When placed in a position of great responsibility as commanding officer of Mobile Hospital No. 39, at Aulnois-sous-Vertuzey, France, he used extraordinary skill and sound judgment in the organization and operation of that unit, the first of its kind in the American Expeditionary Forces. In its formative period he was faced by great and unforeseen difficulties, but with untiring energy and genius he surmounted all obstacles, making his unit a model for all those subsequently organized.

NATHANIEL ALLISON, Colonel, Medical Corps, St. Louis, Mo. For exceptionally meritorious and distinguished services. As chief of the orthopedic work in the zone of the Army, he personally directed, in a most conspicuous and painstaking manner, splinting and orthopedic work, which resulted in the saving of many lives and greatly relieved suffering among our wounded.

CHARLES M. FOX, Captain, M. C., U. S. Army, Chicago, on duty with the Three Hundred and Fifty-Third Infantry, for extraordinary heroism in action. Gassed near Bontheville, France, Oct. 26, 1918, Captain Fox maintained his battalion dressing station under a terrific bombardment of gas and high explosive shells, which almost demolished his station. He quit only when blindness made it impossible for him to work.

Honors to Officers

HARRY N. KERNS, Major, M. C., U. S. Army, evacuation officer at the port of embarkation, has received a decoration from the mayor of Langres, France, in recognition of his services in assembling and organizing Base Hospital 53, which rendered such distinguished service in and around Langres.——DR. WILLIAM J. MAYO, Rochester, Minn., has been awarded the congressional medal of honor, with the following citation:

"DR. WILLIAM J. MAYO, formerly Colonel, U. S. Army, for exceptionally meritorious and conspicuous service, in addition to manifold service to the Surgeon-General by furnishing needed advice and counsel, he distinguished himself by exceptionally meritorious service to the government in his work in the organization of the surgical service and his invaluable assistance in the reorganization of the medical department on the scale demanded by the war."

The mayor of Langres also presented WALTER E. FOLEY, Lieut., M. C., U. S. Army, Davenport, Iowa, with the French Tri-Color and Coat of Arms of the city in appreciation of his service in relieving and ministering to the needs of the city of Langres and in recognition of medical care and treatment given to about 300 French wounded.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Ariton—Dykes, H. R. (L.)
Auburn—Kimball, P. (M.)
Bessemer—Garmon, C. N. (L.)
Wright, S. W. (C.)
Birmingham—Dickson, J. D. (L.)
Spencer, O. M. (C.)
Walker, A. A. (M.)
Blocton—Allgood, H. W. (L.)
Camden—Jones, L. P. (C.)
Camp Hill—Hamner, L. H. (C.)
Dadeville—Banks, J. T. (L.)
Florence—Ellis, L. C. (L.)
Gainesville—Harwood, R. E. (L.)
Geneva—Chapman, C. H. (C.)
Guntheraville—Fennell, R. F. (C.)
Hayneville—Marlette, G. C. (C.)
Hope Hull—Crenshaw, F. (C.)
Jasper—Williams, V. H. (C.)
Robertsdale—Peavy, J. F., Jr. (L.)
Russellville—Gresham, W. A. (C.)
Selma—Kenan, J. (M.)
Tuscumbia—Pierce, W. M. (C.)

ARIZONA

Phoenix—Palmer, C. B. (M.)
Sweek, W. O. (L.)
Tucson—Huffman, I. E. (M.)

ARKANSAS

Crossett—Matthews, W. M. (L.)
Hope—Allen, V. K. (C.)
Little Rock—Goldstein, D. W. (C.)
Scarborough, J. I. (M.)
Visonhaler, P. (L. C.)
Marvell—Meadors, R. C. (L.)
Texarkana—Norwood, F. A. (L.)
West Helena—Lee, H. W. A. (L.)

CALIFORNIA

Bakersfield—Marshall, M. Y. (C.)
El Monte—Saylin, J. (C.)
Fresno—Webster, D. P. (C.)
Los Angeles—Alden, E. (C.)
Beck, H. R. (L.)
Celler, F. A. (M.)
Fellows, A. (C.)
Miller, U. G. (C.)
Shuman, L. (C.)
Modesto—Brace, R. W. (C.)
Oakland—Smith, R. B. (C.)
Oroville—Wilson, J. W. (C.)
San Diego—Black, E. C. (L.)
Grant, J. F. (C.)
San Francisco — Brusco, H. D. (L.)
Wolff, M. B. (L.)
Vallejo—Leachman, R. S. (L.)
Williams—Salter, N. M. (L.)

COLORADO

Denver—Elliott, J. T. (C.)
Powell, C. (M.)
La Junta—Hall, H. E. (C.)
Olathe—Lockwood, C. E. (C.)
Plateau City—Watson, W. V. (L.)
Pueblo—Bronson, W. T. (L.)
Taylor, R. R. (L.)

CONNECTICUT

Hartford—Martelle, H. A. (L.)
New Haven—McGuire, W. C. (C.)
White, H. R. (C.)
Wallingford—Sweet, W. N. (C.)

DELAWARE

Wilmington—Crossan, E. T. (C.)
Miller, H. S. (L.)
Spackman, J. G. (L.)

DISTRICT OF COLUMBIA

Washington—Gray, A. C. (C.)
Johnson, L. A. (C.)
Maxwell, C. E. (C.)
Talbott, J. A. (L. C.)
Wells, W. A. (M.)

FLORIDA

Blountstown—Crozier, G. T. (C.)
Gainesville—Tillman, G. C. (C.)
Hosford—Davis, K. M. (C.)
Jacksonville—Cordes, H. B., Jr. (C.)
Harris, H. H. (L. C.)
Quincy—McEuen, H. B. (C.)
Tallahassee—Gwynn, G. H. (C.)
Tampa—Halliday, J. (C.)
McRae, E. H. (M.)

GEORGIA

Atlanta—Ballenger, E. G. (M.)
Corry, J. E. (C.)
McGehee, H. M. (L.)
Quillian, W. E. (C.)
Augusta—Silver, D. M. (L.)
Columbus—Johnson, R. F. (C.)
Dearing—Sams, J. R. (C.)
Douglas—Clark, T. H. (L.)
Dublin—Walker, S. (M.)
Fitzgerald—Frazer, J. L. (C.)
Flintstone—Barker, H. M. (L.)
Macon—Council, M. D. (C.)
Scottsdale—Allgood, C. L. (L.)
Stone Mountain—Osborne, V. W. (C.)
Sylvester—Stewart, W. K. (L.)

IDAHO

Burley—Cooper, G. H. (L.)
Cambridge—Hopper, S. (C.)
Twin Falls—Coughlin, J. F. (C.)

ILLINOIS

Alton—Seiwell, H. S. (C.)
Antioch—Smith, H. A. (L.)
Cairo—Brown, W. S. (C.)
Charleston—Dudley, G. R. (C.)
Chicago—Anderson, G. H. (L.)
Bromberg, C. B. (L.)
Chamberlin, H. N. (L.)
Christofferson, O. H. (L.)
Clark, J. W. (C.)
Corper, F. J. (C.)
Dolan, J. E. (C.)
Fisher, E. F. (C.)
Foley, J. L. (C.)
Franchere, C. M. (L.)
Graybeal, J. (C.)
Greenburg, L. M. (L.)
Griffiths, E. H. (L.)
Hallock, E. K. (C.)
Hargreaves, O. C. (L. C.)
Harvey, J. A. (L. C.)
MacDonald, E. J. (C.)
Martin, L. W. (C.)
Mix, C. L. (M.)
Morales, G. M. (C.)
Rowan, J. E. (M.)
Sevcik, J. L. (L.)
Van Paing, F. L. (L.)
Weymouth, D. G. (L.)
White, E. W. (L.)
Williams, W. C. (C.)
Du Quoin—Kelly, T. B. (L.)
East St. Louis—Applewhite, L. D. (M.)
Genoa—Ovitz, J. W. (L.)
Hebron—Tupper, H. W. (C.)
Jerseyville—Lewis, C. F. (L.)
Joliet—Roberg, W. E. (C.)
Kankakee—Greenman, E. N. (L.)
Manougian, K. M. (C.)
Lincoln—Rhoads, L. T. (C.)
Moline—Freeman, D. B. (L.)
Mount Olive—Floreth, G. A. (L.)
Oak Park—Potthoff, E. W. (C.)
Oregon—Roe, J. B. (L.)
Pana—Danford, R. C. (C.)
Peoria—Sholl, J. R. (L.)
Riverside—Hubbard, M. H. (L.)
Sandwich—Dudley, E. F. (L.)
Secor—Nagel, F. E. (C.)
Springfield—Bernard, E. L. (C.)
Maurer, F. (C.)
Ottis, D. M. (L. C.)
Smith, R. E. (C.)
Van Wormer, W. W. (C.)
Staunton—Hazel, J. B. (C.)
Stonefort—McSparin, J. M. (L.)
Taylorville—Morton, D. F. (M.)
Warsaw—Loomis, D. (L.)
West Chicago—Kinne, H. W. (C.)

INDIANA

Anderson—Jones, T. M. (M.)
Indianapolis—Carmack, J. W. (L.)
Dubois, E. J. (C.)
Ward, J. H. (M.)
Warfel, F. C. (C.)
La Fayette—Arnett, A. C. (M.)
New Castle—Westhafer, E. K. (M.)
Sheridan—Young, E. M. (C.)
South Bend—Clapp, F. R. (C.)
Terre Haute—Johnson, G. T. (C.)
Weinstein, J. H. (L.)
Vincennes—Pea, E. H. (C.)
Wakarusa—Eicher, F. I. (L.)

IOWA

Allerton—McCall, J. H. (C.)
Ames—Puffett, C. (L.)
Audubon—Matthias, D. F. (C.)
Chariton—Gutch, R. C. (C.)
Defiance—Meyer, V. J. (C.)
Des Moines—Fleischman, A. G. (L.)
Eagle Grove—Christensen, J. R. (C.)
Grand Junction—Reed, A. I. (L.)
Keokuk—Brown, W. F. (L.)
Lamoni—Peterson, O. H. (C.)
Marshalltown—Hermance, G. E. (L.)
Moorland—Farlow, C. T. (C.)
Muscatine—Stiers, J. W. (C.)
Pleasantville—Bare, E. A. (C.)
Sioux City—Watkin, C. R. (L.)
Toledo—Pace, A. A. (M.)
West Union—Whitmore, F. B. (C.)

KANSAS

Burlington—Salisbury, H. T. (M.)
Burton—Hempstid, L. E. (C.)
Canton—Mallison, S. M. (L.)
Cimarron—Klein, R. G. (C.)
Claflin—Jury, H. W. (C.)
Council Grove—Lewis, A. J. (C.)
Greeley—Mills, L. D. (L.)
Haven—Kirkpatrick, W. H. (L.)
Hepler—Mosley, C. L. (L.)

Kansas City—Howell, J. F. (M.)
Speck, R. T. (C.)
Langdon—Ungles, J. B. (L.)
Marion—Coffman, F., Jr. (C.)
Ness City—Venard, T. S. (C.)
Newton—Hartman, R. C. (C.)
Parsons—Cornell, J. C. (C.)
Pratt—Atkins, H. (M.)
Topeka—Rogers, H. S. (L.)
Wichita—Logsdon, R. O. (C.)

KENTUCKY

Bowling Green—Cartwright, F. D. (C.)
Clinton—Hunt, C. (L.)
Covington—Hunter, G. G. (C.)
Northcutt, E. W. (L.)
Yates, F. I. (M.)
Earlington—Nisbet, W. K. (M.)
Garrison—Henthorn, A. C. (C.)
Georgetown—Barlow, E. C. (C.)
Glasgow—Miller, T. F. (C.)
Lebanon Junction—Johnson, O. E. (L.)
Lewisburg—Felts, L. (C.)
Louisville—Bailey, E. R. (L.)
Baker, M. C. (L.)
Garth, C. M. (C.)
Purdom, D. M. (C.)
Lovelaceville—Thompson, G. L. (L.)
Middletown—Wetherby, S. D. (C.)
Owensboro—Hoover, I. J. (C.)
Lockhart, R. (C.)
Owingsville—Goodpaster, J. S. (C.)
Shelbyville—Weakley, A. C. (C.)

LOUISIANA

Gilbert—Gill, D. D. (C.)
Merryville—Frazar, F. R. (L.)
New Orleans—D'Aunoy, J. R. (C.)
Milholland, W. G. (C.)
O'Ferrall, J. T., Jr. (C.)
Silverman, D. N. (L.)
Plaquemine—Landry, A. A. (C.)
Shreveport—Heath, A. G. (C.)
Nelson, A. B. (C.)
Vixen—Funderburk, V. J. (L.)

MAINE

Biddeford—Youland, W. E. (C.)
Ellsworth—Parcher, A. H. (C.)
Madison—Kennison, W. H. (L.)
Oxford—Farris, H. R. (L. C.)
Portland—Thaxter, J. W. (C.)
Unity—Whittaker, P. W. (C.)

MARYLAND

Baltimore—Blake, H. C. (M.)
Coolahan, V. (L.)
Edmunds, P. Ch.—C. (L.)
Gately, J. E. (L.)
Jones, S. B. (M.)
McLaughlin, J. L. (C.)
Mohr, D. H. (C.)
O'Connor, J. J. (M.)
Peltekian, H. K. (L.)
Rogers, H. L. (L.)
Rosenthal, G. W. (C.)
Titlow, H. B. (C.)
Toulson, W. H. (C.)
Warner, H. H. (L.)
Wheeler, H. L. (L.)
Chestertown—Hines, F. B. (C.)
Easton—Palmer, W. R. (L.)
Pikesville—Naylor, H. A. (C.)
Roland Park—Laverty, G. L. (L.)

MASSACHUSETTS

Beverly—Sears, H. E. (L. C.)
Boston—Chandler, T. E. (M.)
Codman, E. A. (M.)
Haskins, A. (L.)
Hornor, A. A., Jr. (C.)
Mason, N. R. (C.)
McMann, W. H. (C.)
Medalia, D. B. (L.)
Sawyer, A. R. (C.)
Brookline—McDonald, W. J. (M.)
Framingham—Biondi, G. (C.)
Kingston—Dudley, C. (L. C.)
Lawrence—Scanlon, J. M. (C.)
Lowell—Perkins, R. S. (C.)
Tabor, E. O. (L.)
New Bedford—Bronelle, A. L. (L.)
Newton—Fried, A. R. (L.)
Salem—Hennessey, W. W. (L.)
South Weymouth—Field, H. M. (L. C.)
Springfield—Hirsch, H. L. (L.)
Peck, R. H. (C.)
Rabinowitz, B. (C.)
Turners Falls—Vinal, C. R. (C.)
Verona—Spencer, C. E. (C.)
Westboro—Chambers, R. M. (C.)
Winthrop—Parker, R. B. (M.)
Wollaston—Lacey, W. H. (L.)
Worcester—McMahon, M. F. (L.)

MICHIGAN

Ann Arbor—Town, F. R. (L.)
Detroit—Agnelly, E. J. (L.)
Bookmyer, R. H. (M.)
Browne, W. H. (M.)
Buck, J. D. (M.)
Buesser, F. G. (M.)
Candler, C. L. (C.)
Darling, M. A. (C.)
Downing, D. B. (L. C.)
Gruber, T. R. K. (M.)
Hanna, C. (C.)
Kane, W. J. (L.)
MacArthur, N. (C.)
Manton, W. W. (M.)
McAfree, F. W. (C.)
Owen, R. W. G. (M.)
Pound, P. L. (C.)
Schlegelmich, W. G. (C.)
Vardan, C. C. (L.)
Flint—Manwaring, J. G. R. (C.)
Grand Rapids—Dixon, W. L. (L.)
Holcomb, J. N. (C.)
Vermeulen, P. (L.)
Jackson—Cooley, R. M. (M.)
McCormick, J. J. (M.)
McLaughlin, M. J. (C.)
O'Meara, J. (L.)
Kalamazoo—Stern, L. D. (L.)
Lansing—McCrumb, R. R. (C.)
Mancelona—Walton, W. W. (C.)
Marlette—Tuck, R. G. (L.)
Mount Clemens—Berry, H. G. (L. C.)
Whitmore Lake—Alway, G. G. (L.)
Wyandotte—Coan, G. L. (M.)

MINNESOTA

Aitkin—Kelly, B. W. (L. C.)
Alexandria—Swanson, R. E. (M.)
Aurora—Tarrall, R. P. (C.)
Austin—Colvert, J. (C.)
Bemidji—Marcum, E. H. (C.)
Braham—Dedolph, T. H. (L.)
Duluth—Sansing, C. (L.)
Minneapolis—Boreen, C. A. (L.)
Cavanor, T. T. (L.)
Hartig, H. J. (L.)
Head, G. D. (M.)
New Richland—Hagen, H. O. (C.)
Osakis—Haberman, E. (L.)
Princeton—Dunn, E. R. (C.)
St. Cloud—Kern, M. J. (C.)
St. Paul—Burch, F. E. (M.)
Christianson, A. (C.)
Hammes, M. M. (C.)
Jester, R. F. (L.)
Martineau, J. L. (C.)
Tintah—Doleman, N. F. (C.)
White Earth—Bernstein, A. (L.)
Zumbro Falls—Radabaugh, R. C. (L.)

MISSISSIPPI

Alligater—Nichols, J. L. (L.)
Arkabutla—Brevard, S. A. (C.)
Black Hawk—Diggs, G. W. (L.)
Brookhaven—Parsons, J. L. (M.)
Camden—Melvin, J. W. (C.)
Hattiesburg—Donald, R. M. (M.)
Jackson—Stewart, N. (M.)
Kiln—Goss, Z. (L.)
Lambert—Crothers, V. M. (L.)
Soso—Williamson, E. H. (C.)
Water Valley—Armstrong, J. C. (C.)
Winona—Lusk, W. J. (M.)

MISSOURI

Ashland—Pryor, H. B. (L.)
Berger—Cutler, R. R. (C.)
Breckenridge—Peck, J. H. (C.)
Butler—Crabtree, E. E. (C.)
Lusk, C. A. (C.)
Glendale—Armstrong, J. H. (C.)
Holden—Murray, S. A. (C.)
Holliday—Urquhart, W. H. (L.)
Kansas City—Billick, E. J. (L.)
Clark, M. H. (C.)
Edmonds, D. D. (C.)
Foster, F. F. (L.)
Gist, W. L. (M.)
Skinner, E. H. (L. C.)
White, E. C. (M.)
Wilhelm, D. E. (C.)
Macon—Smith, E. S. (C.)
Maplewood—Townsend, V. F. (L.)
Mexico—Joller, J. F. (L.)
Pattonsburg—Nigh, J. W. (C.)
Princeton—Perry, J. M. (C.)
Sarcoxie—Boyd, J. W. (C.)
St. Joseph—Gebhart O. C. (M.)
Schmid, O. A. (C.)
St. Louis—Belsey, W. A. (C.)
Clancy, J. F. (L.)
Drake, G. S. (C.)
Dudley, C. R. (C.)
St. Louis—Jaracz, W. J. (L.)
Johnson, E. H. (M.)
Kelly, L. D., Jr. (C.)
Kennedy, A. P. (C.)
Kieffer, R. S. (C.)
Kimball, A. C. (C.)
Kouri, M. F. (C.)
Newell, O. U. (C.)
Rogers, H. (L.)
Swahlen, P. H. (C.)
Thomson, D. A. (L.)
Stoutsville—Wilson, J. M. (C.)
Vichy—Brennan, J. T. (M.)

MONTANA

Cut Bank—Nelson, R. G. (C.)
Froid—Fleischmann, C. B. (L.)
Hilger—Cotton, F. W. (C.)
Livingston—Greene, P. L. (C.)
Moore—Soltero, J. R. (L.)
Sweetgrass—Merritt, C. H. (L.)
Toston—Lukins, A. T. (C.)

NEBRASKA

Ansley—Higgins, R. P. (C.)
Columbus—Koefoot, T. H. (C.)
Dorchester—Panter, R. C. (C.)
Fairmont—Deffenbaugh, M. H. (C.)
Hastings—Hamel, E. B. (C.)
Lincoln—Webb, A. H. (C.)
Omaha—Fitzgibbon, H. M. (C.)
Hahn, M. M. (L.)
Needham, C. T. (C.)
Offerman, A. J. (L.)
Shickley—Elwood, L. W. (L.)

NEW HAMPSHIRE

Manchester—Bergeron, P. (C.)
O'Connor, J. C. (M.)

NEW JERSEY

Arlington—Willan, E. H. (L.)
Atlantic City—Joy, P. C. (L.)
Trager, H. (C.)
Bayonne—Chayes, S. (C.)
Bloomfield—Thompson, D. C. (C.)
Bordentown—Buermann, R. (C.)
Camden—Ramsdell, E. S. (L.)
Court House—Washburn, P. C. (C.)
Cranford—Gilpin, F. B. (C.)
East Orange—Hulett, A. G. (L.)
Minard, E. L. (L.)
Elizabeth—Bunting, P. D. (C.)
Steinke, F. (C.)
Hammonton—Bitler, J. C. (C.)
Harrison—O'Conner, B. A. (C.)
Highlands—Rowland, J. J. (C.)
Hoboken—Chidester, H. S. (L.)
Walker, J. J. (C.)
Jersey City—Scandiello, J. (L.)
McNenney, C. E. (C.)
Montclair—Morrison, M. (L.)
Neshanic—Whiton, W. H. (L.)
Newark—Alling, A. (C.)
Curtis, E. A. (C.)
Emory, G. B. (C.)
McCormick, J. E. (C.)
Rawitz, S. B. (C.)
Wolfs, F. C.
Ocean City—Whiticar, J. H. (L.)
Ocean Grove—Dorr, H. B. (L.)
Oradell—Vandewater, S. A. (C.)
Passaic—Simon, M. L. (L.)
Temple, A. H. (C.)
Paterson—Halnan, J. J. (C.)
Whalen, W. J. (C.)
Springfield—Dengler, H. P. (L.)
Trenton—Haggerty, D. L. (C.)
Weehawken—Valery, W. T. (C.)
Windsor—Silver, E. D. (C.)

NEW MEXICO

Deming—Ward, E. L. (L.)

NEW YORK

Amsterdam—Ormsby, F. H. (C.)
Binghamton—Nunn, S. J. (C.)
Boonville—Honan, W. C. (L. C.)
Brooklyn—Cook, W. H. (C.)
Cooney, M. J. (C.)
Glenn, W. S., Jr. (C.)
Goldman, S. (C.)
Kaplan, C. (L.)
McQuillin, J. P. (M.)
Murphy, M. A. (L.)
Robert, D. R. (C.)
Skidmore, W. E. (C.)
Steele, C. H. (L.)
Weatherford, J. E. (L.)
Weldon, T. F. (L.)
Buffalo—Beals, L. S. (M.)
Cohen, J. (L.)
Sperry, F. E. (C.)
Zimmerman, J. J. (C.)
Cortland—Reilly, D. R. (C.)
Elmira—Foley, T. F. (C.)
McCanna, L. E. (L.)
Flushing—Lawrence, G. J. (M.)
Geneva—Grove, C. W. (C.)
Greenwich—Rogers, M. A. (C.)
Highland—Rivenburg, W. T. (L.)
Huntington—Pendill, W. C. (L.)
Jordan—Osgood, W. W. (C.)
Little Falls—Smith, W. R. (L.)
Long Island City—Goldman, H. (L.)
Mount Vernon—Woodruff, W. S. (C.)
New Rochelle—Reardon, J. S. (C.)
New York—Anderson, W. D. (L.)
Barringer, T. B., Jr. (M.)
Berens, C., Jr. (M.)
Boas, E. P. (C.)
Bodenheimer, M. (M.)
Burston, J. (L.)
Cavallo, M. E. (L.)
Caverly, C. E., Jr. (C.)
Dowd, H. L. (C.)
Erskine, J. P. (M.)
Faller, C. P. (C.)
Flynn, E. A. (C.)
Freed, F. C. (C.)
Freiberger, M. (C.)
Harkins, J. C. (M.)
Hart, A. L. (L.)
Hunt, H. L. (C.)
Irvin, J. S. (C.)
Jackson, H. W. (M.)
Lasher, W. W. (L.)
Levison, H. (C.)
Levy, I. J. (L.)
McEvitt, J. L. (L.)
Mehrny, J. L. (L.)
Mencher, S. (L.)
O'Neill, O. R. (M.)
Rambaud, G. G. (M.)
Schroeder, M. J. (L.)
Seibels, R. E. (M.)
Sengstack, J. L. (L.)
St. George, A. (C.)
Steibel, L. R. (C.)
Strauss, M. J. (L.)
Szerlip, J. (L.)
Van Ness, A. E. (L.)
Wallach, J. I. (L.)
Washton, J. (C.)
Webb, R. C. (C.)
Weiss, J. J. (L.)
Ossining—Barry, T. R. (M.)
Oswego—Dowdle, E. (M.)
Ovid—Gordon, J. G. (C.)
Perry—Brownell, J. R. (C.)
Peddle, G. (C.)
Poughkeepsie—Neumann, T. W. (L.)
Rochester—Boswell, C. O. (M.)
Percy, W. W. (L. C.)
Syracuse—Demong, W. C. (L.)
Trenton—Denelsbeck, J. O. (C.)
Union—Humphrey, R. H. (M.)
Utica—Owens, F. T. (C.)
Vernon—Shipman, F. V. (M.)
Waterloo—Hoehn, F. V. (C.)
Watertown—Thornhill, P. E. (C.)

NORTH CAROLINA

Asheville—Herbert, W. P. (M.)
Caroleen—Brackett, W. E. (L.)
Chapel Hill — Abernethy, E. A. (L. C.)
Charlotte—Gallant, R. M. (L.)
Hovis, L. W. (M.)
Concord—Hartsell, J. A. (C.)
Gibson—Livingston, E. A. (L.)
Greenville—Edgerton, M. T., Jr. (C.)
McGawon, C. (L.)
Kenby—Woodard, G. B. (C.)
Scotland Neck—Morgan, A. D. (C.)
Stedman—Bullard, J. B. (L.)
Stocksville—Morgan, B. E. (L.)
West Durham—Brooks, B. U. (M.)

NORTH DAKOTA

Carrington—Graham, M. P. (C.)
Pingree—Treat, A. M. (C.)

OHIO

Akron—Musser, H. H. (M.)
Postle, R. S. (C.)
Stewart, J. E. (C.)
Barnesville—Judkins, R. J. (C.)
Bryan—Snyder, E. E. (C.)
Bucyrus—Pelton, C. H. (C.)
Canton—O'Brien, J. D. (L. C.)
Carrollton—Shipley, R. T. (M.)
Cincinnati—Freyhof, W. L. (C.)
Jennie, J. (L.)
Osmond, A. E. (C.)
Rhodes, C. B. (C.)
Circleville—Jackson, H. D. (M.)
Cleveland—Fallas, R. E. (C.)
Jamison, W. F. (L.)
Jones, A. S. (M.)
Jones, N. W. (M.)
MacFarland, C. H. (Col.)
Meek, J. A. (L.)
Neary, E. P. (C.)
Oster, L. A. (L.)

Cleveland—Rice, F. A. (C.)
Rohland, W. F. (C.)
Rub, H. O. (M.)
Stone, E. H. (C.)
Columbus—Burkett, D. V. (M.)
Millhon, W. F. (C.)
Noble, R. G. (C.)
Dayton—Firth, R. H. (L.)
Elyria—Lawrence, F. A. (L.)
Findlay—Firman, J. M. (M.)
Fostoria—Hatfield, N. C. (C.)
Freeport—Black, W. K. (C.)
Johnstown—Mauger, R. C. (C.)
Lima—Parry, J. R. (L.)
Tallman, J. A. (C.)
Lorain—Mikolanda, O. (C.)
Maumee—Comstock, R. W. (C.)
Mingo Junction — McElroy, T. (L.)
Mount Vernon — Claypool, J. R. (M.)
New Philadelphia — Coleman, H. A. (M.)
Ottawa—Rappaport, B. (L.)
Piqua—Kunkle, R. L. (L.)
Prairie Depot—Carr, L. R. (L.)
Senecaville—Sheen, C. H. (L.)
St. Paris—Norman, J. W. (L.)
Trumbull—Ailes, M. D. (C.)
Wadsworth—Johnson, R. A. (C.)
Warren—Pontius, W. C. (L.)
Wauseon—Hartmans, C. F. (M.)
Youngstown — Thomas, A. W. (C.)

OKLAHOMA

Altus—Caviness, J. J. (C.)
Eufaula—Shaunty, J. N. (L.)
Guthrie—Hahn, L. A. (C.)
Haileyville — Browning, R. L. (L.)
Lawton—Tolle, C. E. (C.)
Louis—Street, O. J. (L.)
Maquam—McGregor, F. H. (M.)
Muskogee—Ballantine, H. T. (L.)
Norman—Berry, C. N. (L.)
Oklahoma City—Sullivan, E. S. (L.)
Ronston—Walker, H. (C.)
Shawnee—Walker, J. A. (M.)
Snyder—Rea, G. L. (L.)
Stigler—Fannin, F. A. (C.)
Tonkawa — Waggoners, E. E. (C.)
Watonga—Leisure, J. B. (L.)
Wetumka—Hicks, C. A. (L.)

OREGON

Medford—Clancy, R. W. (M.)
Portland—Firey, F. P. (L.)
Miller, D. F. (C.)
Moore, H. B. (M.)
Swenson, K. J. (M.)
Wight, O. W. (M.)
Yenny, R. C. (L. C.)
Salem—Smith, W. C. (M.)
The Dalles—Coberth, T. (L.)

PENNSYLVANIA

Allentown—Lang, W. E. (M.)
Altoona—Kyper, D. C. (C.)
Annville—Marshall, J. E. (L.)
Ashland—Lewis, H. H. (L.)
Beech Creek — Tibbins, P. M. (L.)
Bellefonte—Morgan, T. R. (C.)
Brookville—Snyder, W. L. (C.)
Bryn Mawr—Miller, G. H. (L.)
Burnside—Browne, W. C. (C.)
Charleroi—Viesler, V. P. (L.)
Chester—Dunn, L. S. (L.)
Nothnagle, F. R. (C.)
Coatesville—Pratt, C. I. (L.)
Connellsville — Douglas, E. W. (C.)
McKee, R. S. (M.)
Dempseytown — Ricketts, A. W. (C.)
Erie—Smith, J. R. (C.)
Stackhouse, J. A. (L.)
Germantown—Forst, J. R. (M.)
Greensburg — Barclay, H. B. (M.)
Cole, T. P. (M.)
Harleysville—Keeler, R. R. (C.)
Harrisburg—Coover, C. (C.)
Johnstown—Meyer, J. (L.)
Kingston—Summa, F. P. (C.)
Kittaning—Sedwick, A. J. (C.)
Lancaster—Fulton, H. C. (C.)
Miller, S. W. (C.)
Weaver, G. B. (C.)
Leetonia—Long, M. R. (C.)
Masontown—Wells, F. K. (C.)
Mayport—Shannon, A. C. (C.)
McDonald—Dickson, W. R. (C.)
Monessen—Conn, R. E. (L.)
Mount Joy—Workman, W. M. (C.)
Nanty Glo — Wilkinson, W. W. (C.)
New Castle—Harper, H. C. (C.)
New Kensington—Snyder, J. F. (M.)
Thomas, D. O. (M.)
New Salem — Davidson, C. H. (C.)
Lowe, D. E. (C.)
Peekville—Pentecost, M. I. (L.)
Philadelphia—Anders, A. (C.)
Butler, A. (M.)
Clinton, J. B. (C.)
Coates, G. M. (L. C.)
Conover, J. R. (L.)
Copeland, A. F. (C.)
DeLong, P. (C.)
Dorsett, R. S. (C.)
Engle, J. L. (M.)
Gerhart, W. F. (C.)
Hamlin, P. G. (C.)
Johnson, L. W. (C.)
Leonard, C. F. (L.)
Lott, H. H. (C.)
Lynch, J. (C.)
Marcucci, V. (C.)
Martin, W. M. (C.)
McKee, H. J. (M.)
Melnick, T. (C.)
Merscher, C. W. (C.)
Metheny, S. A. S. (C.)
Mitchell, A. G. (C.)
Murphy, E. C. (L.)
Nichols, W. (M.)
Parkinson, W. N. (C.)
Ramsey, F. M. (M.)
Regester, R. P. (C.)
Rodenheiser, E. W. (C.)
Seligman, L. (L.)
Stalberg, S. (C.)
Stamm, C. J. (C.)
Stephan, G. L. (C.)
Stimson, C. M. (M.)
Strop, A. C. (C.)
Sylis, W. M. (C.)
Tunnell, S. W. (M.)
Udell, W. (L.)
Weber, F. (C.)
Weedek, S. D. (C.)
Witman, R. G. (M.)
Philipsburg—Marks, S. J. (C.)
Pittsburgh—Allen, C. W. (C.)
Bruce, P. L. (L.)
Eggers, A. M. (M.)
Gano, C. H. (C.)
Glynn, W. H. (C.)
Jahn, A. H. (L.)
Marcy, C. H. (C.)
McCain, G. M. (M.)
Newhouse, J. E. (C.)
Rectewald, W. E. (L.)
Scurry, C. J. (C.)
Reading—Cantough, C. S. (C.)
Scranton—Beach, G. B. (C.)
Davis, W. J. L. (C.)
Sunbury—Deitrick, G. A. (C.)
Uniontown — Coughanous, A. E. (L.)
Vandergrift—Lace, W. J. (C.)
Washington—Beveridge, D. (L.)
Patterson, G. E. (C.)
Waynesboro—Patterson, W. (L.)
West Leesport — Lenker, R. W. (L.)

RHODE ISLAND

Newport—Stevenson, A. W. (C.)
Providence — Gardner, G. W. (M.)

SOUTH CAROLINA

Belton—Weathersbee, A. B. (L.)
Carlisle—Long, R. H. (L.)
Claussen—Claussen, J. R. (C.)
Cross Hill—Mills, F. B. (L.)
Darlington — Alexander, O. A. (C.)
Scott, C. M. (L.)
Newry—Marett, W. C. (C.)
Spartanburg — Crook, M. (C.)
Sumter—Burgess, W. H. (L.)

SOUTH DAKOTA

Elkton—O'Connor, D. F. (M.)
Groton—Clark, C. W. (L.)
Mitchell—Delaney, W. A. (C.)
White Rock—Engh, S. (L.)
Winner—Kimball, A. P. (L.)
Woonsocket—Kidd, F. S. (M.)

TENNESSEE

Bristol—Vance, W. K., Jr. (L.)
Chattanooga—Ingalls, A. T. (C.)
Cleveland—Minor, D. (L.)
Columbia—Gilmore, L. H. (L.)
Etowah—Richards, W. D. (L.)
Hampton—Shoun, J. B. (C.)
Knoxville—Acuff, H. L. (C.)
Macon—Boswell, W. L. (L.)
Memphis—Venn, F. C. (C.)
Nashville—Orr, E. M. (C.)

TEXAS

Austin—Lincecum, A. L. (C.)
Belle—Miller, F. P. (C.)
Call—Blow, F. T. (C.)
Cameron—Van Zandt, G. T. (L.)
Canton—Hearin, W. C. (C.)
Childress—Snyder, J. W. (C.)
Granfills Gap—Pitcenneke, P. C. (L.)
Dallas—Cooper, J. S. (C.)
Newton, F. H. (L.)
Franklin—Connor, C. J. (C.)
Fort Worth — Alexander, J. C. (M.)
Cook, W. G. (C.)
Garner—Howard, C. C. (L.)
Gorman—Blackwell, G. T. (L.)
Henrietta—Arnold, C. K. (L.)
Houston—Arnold, E. M. (M.)
Green, C. C. (C.)
Pritchett, I. E. (M.)
Jacksonville—Jones, E. B. (L.)
Martindale—Douglas, G. W. (L.)
Paducah—Harper, J. W. (L.)
Pampa—Purviance, W. (C.)
Runge—Pressly, T. A. (C.)
San Antonio—Goode, J. W. (L.)
Goodson, T. N. (C.)
Kitowski, C. B. (C.)
Stamford—Southard, D. (L.)
Temple—Baliff, H. C. (L.)
Thrall—Hopkins, Y. F. (C.)
Waco—Hoke, H. E. (L.)
Stanislav, F. J. (L.)

UTAH

Salt Lake City—Ashley, R. W. (C.)
Preston, W. V. (C.)

VIRGINIA

Bridgewater—Bell, J. H. (L.)
Bristol—Wiley, W. S. (C.)
Cherrydale—Walton, J. H. (C.)
Hampton-on-Newsstep, J. E. (M.)
Independence — Phipps, W. M. (L.)
Iron Gate—Tyree, A. D. (C.)
Norfolk—Brown, I. (M.)
Paris—Moore, J. A. (L.)
Raven—Moore, M. B. (C.)
Richmond—Anderson, M. L. (M.)
Ezekiel, G. A. (M.)
Govan, T. P. (L.)
Lewis, C. H. (M.)
Warinner, J. E., Jr. (L.)
Roda—Rollings, J. A. (M.)

WASHINGTON

Aberdeen—Randolph, H. C. (C.)
Bellingham—Axtell, W. H. (C.)
Montesano—Marcy, G. E. (C.)
Mount Vernon — Cassell, R. J. (L.)
Northbend—Burke, R. T. (M.)
Seattle—Allen, H. E. (L. C.)
Black, F. A. (M.)
Fick, E. P. (M.)
Hunt, J. W. (M.)
Mattice, A. F. (C.)
Plummer, R. C. (M.)
Spokane—Charlton, M. R. (C.)
Hamblen, R. N. (M.)
Newell, R. I. (C.)
Tacoma—Schroeder, F. H. (C.)
Walla Walla—Montgomery, C. E. (L.)

WEST VIRGINIA

Amma—Harper, C. A. (C.)
Bentree—Woodall, R. E. (C.)
Colliers—Focer, R. L. (C.)
Elizabeth—McClung, P. W. (C.)
Hinton—Van Sant, W. L. (C.)
Moundsville — Compton, A. F. (C.)
Seth—Sutphin, M. (L.)
Sweet Springs — Traynham, B. L. (C.)
Wheeling—Goin, L. S. (C.)
Wolf Summit—Corbin, J. E. (C.)
Woodville—Jarrell, D. B. (C.)

WISCONSIN

Appleton—Moore, W. N. (C.)
Scott, J. R. (L. C.)
Bowler—Knox, E. R. (C.)
Burlington—Powers, J. W. (C.)
Chippewa—Smith, G. M. (C.)
Eau Claire — Ziegler, J. E. B. (L.)
Forest Junction—Harkins, J. P. (L.)
Green Bay—McCafey, A. J. (M.)
Highland—Hudek, D. F. (C.)
Janesville—Van Kirk, H. W. (M.)
Madison—Sisk, I. R. (L.)
Milwaukee — Blumenthal, R. W. (M.)
Kenney, R. L. (C.)
Saltzstein, H. C. (C.)
Norwalk—Cooper, C. A. (C.)
Rhinelander—Garner, H. L. (L.)
Richland Centre—Ainsworth, H. H. (C.)
Ripon—Barnes, E. C. (M.)
Sheboygan—Fiedler, O. A. (L. C.)
Stevens Point—Copps, L. A. (C.)
Superior—Kyllo, J. C. (L.)
Tomahawk — McCormick, W. C. (L.)
Two Rivers—Wiltrout, I. G. (L.)

WYOMING

Cheyenne—Desmond, L. P. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

San Francisco—Holzberg, H. L.

ILLINOIS

Bushnell—Ritchey, G. F.
Chicago—Anderson, A. A.

INDIANA

Indianapolis—Graham, N. P.

KANSAS

Rosedale—Whitney, E. L.

LOUISIANA

Eunice—Lewis, C. W.

MICHIGAN

Midland—Lewinstein, S. M.

MINNESOTA

Duluth—Patton, F. J.
Minneapolis—Lundquist, E. F.

MISSOURI

St. Louis—Will, L. A.

NEBRASKA

Homer—Larsen, A. A.
Omaha—Thompson, R. Y.

NEW YORK

New York—Murray, H. J.
Rubin, H. S.

OHIO

Cleveland—Heym, R., Jr.
Toledo—Orwig, E. A.

PENNSYLVANIA

Norristown—Yeakle, W. A.

SOUTH CAROLINA

Williston—Smith, J. G.

TEXAS

Winnsboro—Boyd, L. J.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Devens, Mass., from Camp Travis, Capt. W. G. THIGPEN, Montgomery.

To San Antonio, Texas, Kelly Field, from Hoboken, Lieut. E. O'CONNELL, Birmingham.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major M. P. NEAL, Heflin.

The following order has been revoked: *To Camp Lee, Va.*, from Camp Dix, Lieut. J. G. SANDERS, Troy.

Arkansas

To Camp Meade, Md., from Fort Logan H. Roots, Lieut.-Col. C. M. WALSON.

To report to the commanding general, Eastern Department from Camp Dix, Major J. E. PHILLIPS, Eureka Springs.

California

To Benicia, Calif., from Camp Dix, Lieut. F. H. CHASE, Los Angeles.
To San Diego, Calif., Rockwell Field, from Benicia, Calif., Capt. A. W. SMITH.
To Spartanburg, S. C., from Camp Dix, Capt. J. A. ORBISON, Whittier.

Colorado

To Fort Sam Houston, Texas, base hospital, from Fort Bliss, Lieut. S. S. GOLDHAMMER, Denver.

Connecticut

To Fort Logan, Colo., from Mineola, Major R. BLACKMORE, Hartford.
To Plattsburg Barracks, N. Y., from Camp Devens, Capt. H. L. BURR, Middletown.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Lieut. H. E. STEWART, New Haven.

District of Columbia

To Camp Dodge, Iowa, from Camp Meade, Major W. O. WETMORE, Washington.
To Canal Zone, from Walter Reed General Hospital, Major E. A. BOCOCK.
To New York City, from Surgeon-General's Office, Col. P. W. HUNTINGTON.
To report to the commanding general, Southern Department, from Philippine Islands, Major J. C. LEHARTY, Washington.
To San Francisco, Calif., as department sanitary inspector, from Surgeon-General's Office, Col. E. G. BINGHAM.

Florida

To Pittsburgh, Pa., from Camp Gordon, Capt. M. E. HECK, St. Augustine.

Georgia

To Camp Pike, Ark., from Fort Riley, Lieut. H. W. BROOKS, Columbus.

Illinois

To Camp Grant, Ill., base hospital, from St. Louis, Lieut. E. L. DALLWIG, Chicago.
To Camp Lee, Va., from Chicago, Lieut. H. S. EDSON, Chicago.
To Camp Pike, Ark., from Fort Riley, Lieut. J. H. MITCHELL, Chicago.
To Carlisle, Pa., from Camp Dix, Major E. M. SMITH, Georgetown.
To Colonia, N. J., from Philadelphia, Lieut. E. H. SEIFERT, Chicago.
To Fort Bliss, Texas, base hospital, from Camp Lewis, Major R. M. RITCHEY, Elgin.
To Fort McDowell, Calif., from Camp Dix, Major J. T. EDWARD, Chicago.
To Fort Sheridan, Ill., from Philadelphia, Lieut. C. J. CHALLENGER, Chicago; from Walter Reed General Hospital, Lieut. J. STERN, Chicago.
To Fort Snelling, Minn., from Camp Devens, Capt. M. L. GALLAGHER, Chicago.
To Plattsburg Barracks, N. Y., from Chicago, Capt. H. G. LAMPE, Chicago.
To Spartanburg, S. C., from Fort Oglethorpe, Lieut. C. E. KELSO, Thomasboro.
To Washington, D. C., from Chicago, Lieut.-Col. T. E. DARBY.

Indiana

To Camp Custer, Mich., from Camp Dix, Capt. A. G. KINBERGER, Galena.
To Fort McHenry, Md., from Camp Dix, Capt. M. H. KUTCH, Terre Haute.
To Walter Reed General Hospital, D. C., from Camp Dix, Major H. M. HOSMER, Gary.

Iowa

To Camp Dodge, Iowa, from Fort Sheridan, Capt. W. D. McFAUL, Miles.
To Camp Pike, Ark., from Fort Riley, Major E. E. HOBBY, Iowa City.

Kansas

To Camp Jackson, S. C., from Fort Riley, Lieut. G. H. ALLEN, Topeka.
To Fort Riley, base hospital, from Spartanburg, Lieut. H. R. SCATES, Baxter Springs.
To Oteen, N. C., from Fort Oglethorpe, Lieut. C. O. DAVISON, Garden City.
To San Francisco, Calif., Letterman General Hospital, from Fort Riley, Capt. A. G. BOWER.

Kentucky

To Camp Dodge, Iowa, from Camp Dix, Capt. R. B. MORRIS, Bowling Green.
To Camp Zachary Taylor, Ky., from Fort Riley, Capt F. M. WALKER, Louisville.
To Fort Bayard, N. M., from Camp Dix, Capt. S. E. STRAUBE, Edgoten.
The following order has been revoked: *To Fort Leavenworth, Kan.*, from Fort Riley, Lieut. C. B. NEIDHAMER, Sturgis.

Louisiana

To Fort McPherson, Ga., from Camp Dix, Major W. M. PERKINS, New Orleans.

Maryland

To Fort McHenry, Md., from Hoboken, Capt. C. R. BROOKE, Baltimore.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Capt. A. C. SUTTON, Baltimore.

Massachusetts

To Camp Dix, N. J., Lieut.-Col. F. L. MORSE, Somerville.
To Camp Upton, N. Y., base hospital, from Williamsbridge, Capt. H. A. JOHNSON, Lynn.
To Fort Des Moines, Iowa, from Boston, Lieut. F. H. THORNE.
To Fort McPherson, Ga., from Camp Gordon, Major R. B. OBER, Springfield.
To Plattsburg Barracks, N. Y., from Boston, Capt. F. A. DAVIS, Boston.
To report to the commanding general, Northeastern Department, from Camp Dix, Capt. E. M. MORRIS, Fall River.

Michigan

To Camp Custer, Mich., from Camp Dix, Capt. H. J. DEFNET, Escanaba.
To Erie, Ohio, from Aberdeen, Md., Capt. M. J. SCHWANZ, Detroit.
To Walter Reed General Hospital, D. C., for instruction, from Camp Lee, Capt. C. L. BARBER, Lansing.

Minnesota

To Fort Snelling, Minn., from Camp Dodge, Lieut. P. A. WARD, Minneapolis.
To Plattsburg Barracks, N. Y., from Camp Dix, Capt. C. D. SQUIRES, Rochester.

Missouri

To Camp Dodge, Iowa, from Camp Dix, Capts. J. J. DEVEREAUX, Hawk Point; N. A. YOUNG, St. Louis.
To Fort Leavenworth, Kan., from Fort Riley, Lieut. J. E. GLENN, St. Louis.
To report to the commanding general, Eastern Department, from Camp Dix, Capt. W. Y. HOLLINGSWORTH, Bel Air.

Montana

To Camp Dodge, Iowa, from Camp Dix, Major C. L. ROY, Three Forks.

Nebraska

To Camp Jackson, S. C., from Fort Riley, Lieut. G. S. REEDER, Freemont.
To Houston, Texas, from Camp Bowie, Lieut. C. C. HICKMAN, Lincoln.

New Hampshire

To Carlisle, Pa., from Camp Devens, Capt. R. S. PERKINS, Exeter.

New Jersey

To Camp Benning, Ga., as camp surgeon, from Camp Dix, Col. C. E. KOEPER.
To Camp Dix, N. J., as commanding officer, base hospital, from Hoboken, Col. J. C. MAGEE.
To Denver, Colo., from Camp Dix, Capt. D. B. STREET, Jersey City.
To Fort Myer, Va., from Camp Dix, Col. J. D. FIFE.
To Fort Worth, Texas, as camp surgeon, from Hoboken, Col. K. NELSON.
To Oteen, N. C., from Camp Dix, Major R. SKELTON.
To report to the commanding general, Southern Department, from Camp Dix, Lieut.-Col. W. C. DAVIS.
To Walter Reed General Hospital, D. C., from Hoboken, Col. J. W. HANNER; from Williamsbridge, Lieut. W. L. NIXON, Raritan.
To Washington, D. C., from Hoboken, Col. H. PAGE; Surgeon-General's Office, from Camp Dix, Major H. S. MARTLAND, Newark.

New York

To Camp Devens, Mass., to examine the command for nervous and mental diseases, from Camp Meigs, Capt. K. A. ENLIND, South Nyack.
To Camp Dodge, Iowa, base hospital, from Chicago, Major H. L. VAN WINKLE, Albany.
To Camp Lee, Va., from Camp Dix, Capt. P. M. BOLTON, Buffalo.
To Columbus Barracks, Mo., from Hoboken, Lieut. C. H. HOCHMAN, New York.
To Fort Jay, N. Y., from Camp Lee, Lieut. J. H. TOOMEY, New York.
To Fox Hills, N. Y., from Camp Dix, Major G. A. KEONING, New York.
To report to the commanding general, Eastern Department, from Camp Devens, Lieut. G. M. GLENN, Fonda.
To the retired list, from New York, Major N. S. JARVIS, New York.
To Washington, D. C., from Hoboken, Lieut. R. MALCOLM, Yonkers.

Ohio

To Camp Sherman, Ohio, base hospital, from Camp Lewis, Capt. C. G. LAROCCO, Cleveland.
To Fort Benjamin Harrison, Ind., from Camp Sherman, Lieut. E. D. JACKSON, Georgetown.
To Fort Des Moines, Iowa, from Camp Grant, Capt. C. L. IRELAND, Columbus.

Oklahoma

To Biltmore, N. C., from Army Medical School, Lieut. J. E. HEATLEY, Carmen.
To Camp Bragg, N. C., from Camp Pike, Lieut.-Col. F. J. BOLEND, Oklahoma.

Oregon

To Camp Gordon, Ga., from Fort Riley, Lieut. C. S. MENZIES, Portland.
To report to the commanding general, Western Department, from Camp Custer, Capt. L. H. MOTT, Salem.

Pennsylvania

To Astoria, N. Y., from Camp Dix, Capt. J. J. BENDICK, Olyphant.
To Camp Jackson, S. C., base hospital, from Philadelphia, Capt. J. BEATTIE, Lebanon.
To Colonia, N. J., from Camp Dix, Lieut.-Col. D. M. HOYT, Philadelphia.
To Fort McPherson, Ga., from Camp Meade, Lieut. C. J. BOWNE, Philadelphia.
To Fort Myer, Va., from Camp Dix, Lieut. A. R. WOODS, Philadelphia.
To Plattsburg Barracks, N. Y., from Camp Meade, Capt. W. F. BEITSCH, New Brighton.
To report to the commanding general, Eastern Department, from Camp Dix, Major R. S. DAVIS, Philadelphia; Capt. R. W. COTTON, McKees Rocks; from New York, Lieut. J. C. HARDING, Philadelphia.
To Spartanburg, S. C., from Camp Dix, Major A. N. BAGGS, Abington.
The following order has been revoked: *To report to the commanding general*, American Expeditionary Forces, from Carlisle, Major D. N. W. GRANT.

Rhode Island

To Hampton, Va., from East Norfolk, Capt. W. H. DYER, Providence.

South Carolina

To Biltmore, N. C., from Camp Jackson, Major M. P. MOORER, Georgetown.
To Camp Meade, Md., from Charleston, Lieut.-Col. E. C. REGISTER.

Tennessee

To Camp Lee, Va., from Camp Bowie, Major H. M. FRANCISCO, Nashville.

Texas

To Denver, Colo., from Fort Sam Houuston, Col. R. C. LOVING.
To Mount Clemens, Mich., Selfridge Field, from Fort Sill, Lieut. W. L. CULPEPPER, Goose Creek.
To Walter Reed General Hospital, D. C., from Houston, Lieut. R. W. WALKER.

Utah

To Otisville, N. Y., from New Cumberland, Lieut. J. C. HARDIE, Garfield.

Virginia

To Hampton, Va., from Plattsburg barracks, Capt. C. D. KELLAM, Norfolk.
To Washington, D. C., from Camp Lee, Lieut.-Col. W. R. DEAR, Surgeon-General's Office, from Newport News, Col. E. M. WELLES, Jr.

Washington

To report to the commanding general, Western Department, from Camp Dix, Lieut. S. B. ROSS, Seattle.

Wisconsin

To Camp Dodge, Iowa, from Camp Bowie, Major P. G. LASCHE, Richland Center; from Camp Dix, Capt. A. A. AXLEY, Butternut.
To Walter Reed General Hospital, D. C., from Camp Lee, Lieut. J. D. GILLIS, Wauwatosa.

Wyoming

To Denver, Colo., from Letterman General Hospital, Capt. O. K. SNYDER, Cheyenne.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

New Roentgenologists for Garfield Hospital.—Drs. Thomas A. Groover and Arthur C. Christie have been appointed roentgenologists on the staff of Garfield Hospital to succeed Dr. Walter H Merrill, whose resignation takes effect July 1.

Renewal of an Ancient Charter Sought.—An item in THE JOURNAL for June 28 mentions a bill introduced in the House of Representatives by Mr. Lazaro of Louisian providing for the incorporation of the Medical Society of the District of Columbia and conferring the power to own and convey real estate. The caption of the item stated that the bill incorporates a new medical society; this is incorrect as the real purpose of the bill is to secure the historical continuity of a charter originally granted by the national Congress, Feb. 16, 1819, the bill of incorporation having been signed by President James Monroe. A new charter, with some emendations, was granted by Congress, July 7, 1838, the act being signed by President Van Buren. Both of these charters conferred on the society the right and duty of electing a medical licensing board, the sole guardian of the standards of medical practice in the District of Columbia until 1896 when a board of medical supervisors for the District of Columbia was provided by Act of Congress. Since the original charters imposed on the society the duty of examining and licensing physicians, they forbade the society to establish a tariff of charges or fees; when, therefore, the function of the society as a licensing body was abolished on the one hand, and on the other the society in 1913 took on the function of a component unit of the American Medical Association, these old charters lapsed. It is now sought to revive the corporate identity of the society by congressional action, and the incorporators named in the bill are the members of the executive committee for the current year, it being impracticable to name the 565 members of the society in a bill of incorporation. The power to own and convey property is sought by the society because of the intention to erect a home for the organization in the near future; an energetic and highly successful campaign is now going forward which should result in the erection of a $75,000 building this fall.

ILLINOIS

Illegal Practitioner Arrested.—Ernest M. Sparks of Casey was arrested by an inspector of the Department of Registration and Education of the State of Illinois and fined $284 for practicing "Suggestive Therapeutics" in violation of the medical practice act.

Personal.—Dr. C. St. Clair Drake, director of the State Department of Public Health, Springfield, was elected secretary-treasurer of the Conference of State Health Authorities at its annual meeting in Atlantic City, and was also made secretary of the executive committee of health authorities of the United States.——Dr. A. B. Taylor, Canton, has been elected county physician of Fulton County.

Chicago

Illegal Practice Charge.—A. G. Dillenbaugh is said to have been taken into custody June 20, by an inspector of the Department of Registration and Education charged with practicing medicine without a license.

Clinic for Discharged Soldiers.—The new clinic established at Mercy Hospital for discharged soldiers and sailors and their dependents, which has been equipped at an expense of $35,000 by the National Catholic War Council, was opened June 25.

Sanatorium Auditorium Opened.—The new auditorium building erected at the Municipal Tuberculosis Sanatorium, at a cost of $100,000, was formally opened June 28. The dedicatory exercises were held June 29. Dr. William M. Harsha, superintendent of the institution, presided and addresses were made by Drs. John Dill Robertson and William A. Pusey and others.

Home from Overseas.—Gustavus M. Blech, Lieut.-Col., M. C., U. S. Army, who went overseas as assistant division surgeon of the Thirty-Third Division, was then in command of a base hospital at Autun, France, and later was commanding officer of a large base hospital in France, returned to Chicago, June 29.——William H. G. Logan, Col., D. C., U. S. Army, has returned after more than two years of military service, and has resumed practice.——Ralph S. Porter, Lieut.-Col., M. C., U. S. Army, division surgeon of the Twenty-Sixth Division and also on duty with the First and Second Divisions overseas, reached New York on his return home, June 26.

Personal.—Dr. Frank Billings has been discharged from military service and has returned to Chicago.——Dr. H. Gideon Wells has reached Chicago from Roumania where he did administrative public health work. There is much typhus and smallpox in Roumania, largely accounted for because the army has been mobilized, taking most of the physicians from civil practice.——Dr. Charles M. Robertson has been discharged and has resumed practice.——Dr. Walter W. Armstrong of the health department has been made city health officer of La Crosse, Wis.——Joseph D. Purvis has been made chief director of the Hahnemann Medical College and Hospital, for a term of five years, succeeding Dr. Clarence V. Clemmer.

KENTUCKY

Premedical Work Required.—The Kentucky State Board of Health has adopted as a requirement for application for licensure, two years of premedical work. This rule becomes effective in 1922.

Tablet Unveiled.—Appropriate exercises at the unveiling of the memorial tablet to the late Dr. Charles O. Zahner, professor of physiology in the University of Louisville, took place in the college building, June 26.

Founders' Day Dinner.—Founders' day dinner exercises were celebrated under the auspices of the Louisville Alumni Association of Vanderbilt University, at the Pendennis Club, Louisville, May 24. Dr. John A. Witherspoon, Nashville, Tenn., delivered the principal address.

Personal.—Drs. John Walker Moore, McConnellsville, S. C., and Larren R. Ellars, National Military Home, Ohio, have been elected full-time teachers in medicine and surgery, respectively, in the University of Louisville. They will reside in the hospital and will direct the work of the resident intern staff, and the bedside teaching of the medical classes. ——Dr. Granville S. Hanes, Louisville, will soon leave for England and France, where he will take up special research work on the cancer problem.——Dr. Thomas C. Holloway has been discharged from the Medical Corps, U. S. Army, after service overseas, and has returned to Lexington.

MARYLAND

Volunteers of America to Establish Hospital.—Arrangements have been completed for the establishment of an emergency hospital by the Volunteers of America in Baltimore. A four-story brick structure has been secured and the work of remodeling will start immediately, so that the hospital will be open by October 1.

For Quarantine Station.—Acceptance of the Baltimore Quarantine Station by the government at the price of $176,775 is provided for in the sundry civil bill, which has been reported to the Senate by Senator Warren, chairman of the Appropriations Committee. This bill authorizes the secretary of the treasury to acquire the station to be operated as one of the adjuncts of the public health service.

Site for Tuberculosis Sanatorium Selected.—The directors of the Maryland Tuberculous Sanatorium have closed their option on the property adjoining Eudowood Sanatorium at Towson, this property to be used as a site for a tuberculosis sanatorium for the colored people, as provided by the last legislature. The tract comprises 50 acres of undeveloped property. The directors of the institution expect to make the new sanatorium the first of a series to be erected throughout the state for the treatment of colored people suffering from the disease. Because of the prevalence of this disease among the negroes in Maryland, it is declared that the establishment of such an institution as is proposed will be a protection to Towson, rather than an inconvenience.

Personal.—Henry R. Carter, Major, M. C., U. S. Army, has obtained his discharge from the Army and will shortly return to his home at the U. S. Marine Hospital in Baltimore. ——Harry C. Schmeisser, Major, M. C., U. S. Army, professor in the department of pathology in the Johns Hopkins University, has arrived in the United States after fourteen months' service with the U. S. Army in France.——William J. Coleman, Major, M. C., U. S. Army, Baltimore, former superintendent of the University Hospital, who has been serving with the American Expeditionary Forces, has been promoted to the rank of lieutenant-colonel and is stationed at Coblenz, Germany.——Dr. Alma S. Rotholz, Baltimore, of the Johns Hopkins Hospital, who was engaged by the Red Cross to work among the children of the war-ridden territory under the direction of Dr. William F. Lucas, Sykesville, and while in France acted as resident physician at a hospital for children at Havre, France, has returned to her home in Baltimore.——N. Moreland Owensby, Major, M. C., U. S. Army, Baltimore, who has been stationed at the base hospital, Camp Gordan, Ga., for several months, has been discharged from the service and will locate in Atlanta.——At the recent commencement exercises of the University of Georgia, Augusta, the honorary degree of doctor of science was conferred on Dr. John M. T. Finney, Baltimore.

MASSACHUSETTS

Personal.—George F. Keenan, Major, M. C., U. S. Army, Brighton, has been promoted to lieutenant-colonel, and has been transferred to the staff of the chief surgeon at Le Mans, France.——Drs. Edward H. Bradford and Frederick C. Shattuck, both of Boston, have been elected members of the board of overseas of Harvard University.

Memorial Building for City Hospital.—A three-story building to be known as the Thorndyke Memorial and to be devoted to research work in pathology is to be erected at the Boston City Hospital during the summer, at a cost of more than $200,000, in memory of the late Dr. William H. Thorndyke, Boston. The new building will be erected in the rear of the medical laboratory in the hospital grounds.

MICHIGAN

Correction.—In the June 7 issue of THE JOURNAL it was erroneously noted that the annual meeting of the Michigan State Medical Society was held in Bay City. The meeting was held in Detroit.

Personal.—Dr. William R. Grant, Lyons, who has been ill for a long time, after examination in the probate court, June 7, was taken to the Traverse City State Hospital for treatment.——Dr. James A. King, postmaster of Manistee for more than five years, has resigned.

MISSOURI

Laboratories Discontinued.—The laboratories at the state board of health office have been discontinued and the work of these institutions has been assumed by the department of preventive medicine laboratories of the state university, Columbia.

Personal.—Dr. M. J. Armstrong, Springfield, has been elected assistant physician and bacteriologist at the Missouri Sanatorium, Mount Vernon.——Dr. Harry LaRue, Dexter, suffered a second cerebral hemorrhage and is reported to be in critical condition.

Division of Child Hygiene Established.—The recent legislature passed a bill creating a division of child hygiene in the state department of health and giving the state board of health general supervision and regulation of the physical inspection of public schools in the state.

Communicable Disease Law Passed.—At the last session of the legislature, a law was enacted giving the state board of health authority to promulgate and enforce adequate rules and regulations for the control and prevention of communicable diseases. This enables the board to comply with the requirements of the interdepartmental social hygiene board. Active cooperation will begin, July 1. The state receives $35,808 as its allotment.

Resolutions Against Venereal Diseases.—At the annual meeting of the Missouri State Medical Association, held at Excelsior Springs, May 26 to 28, resolutions were adopted setting forth that the Missouri State Board of Health on account of lack of funds is handicapped in its cooperation with the United States Public Health Service in the conduct of a vigorous campaign against venereal disease by its inability to arrange the provision of facilities for free laboratory examinations of specimens and the diagnosis of venereal disease, to furnish free arsphenamin for indigent cases, and to adopt a policy for clinics and free treatment. The association endorsed the campaign being waged by the United States Public Health Service, and especially that part of the campaign which provides facilities for the diagnosis and treatment of venereal disease, calling on physicians in the state to cooperate with the health authorities in their efforts to combat venereal disease, and urging that the local authorities in the larger cities of the state provide for the establishment of clinics in cooperation with the state board of health.

NEW YORK

Personal.—Dr. Edward S. Godfrey of Albany has returned from France, where he has been connected with the American Red Cross in the capacity of chief of health inspection service.

Clinton County Increases Public Health Facilities.—The board of supervisors has provided a public health nurse, a school nurse and a tuberculosis and venereal clinic at Plattsburg; a school nurse at Chazy; a visiting nurse at Ausable Forks and at Lyon Mountain a county tuberculosis nurse.

New York City

Mount Sinai Prepares to Build.—Plans have been filed with the building department for an eight-story addition to Mount Sinai Hospital, on Fifth Avenue between Ninety-Ninth and One Hundredth streets. The estimated cost of the proposed addition is $500,000.

NORTH CAROLINA

Hospital for High Point.—Several High Point physicians are planning for the construction of a new hospital to cost with equipment, $75,000, and to be of fireproof construction throughout.

Hospitals Made Permanent.—U. S. Army General Hospital No. 19, Oteen, near Asheville, is announced as a permanent hospital and a new lease has been negotiated with the owners for the continued use of the Kenilworth Hotel which was taken over early in the war for the use of the hospital. The U. S. Military Hospital at Azalea, it is also understood, will be continued permanently for the care of tuberculous patients.

Personal.—Davidson College at the recent commencement conferred the degree of LL.D. on Dr. John Peter Monroe of Charlotte, formerly president of the North Carolina Medical College and of the North Carolina State Medical Society. ——Dr. Claude L. Pridgen, Wilmington, delivered the principal address at the annual North Carolina state masonic picnic at the State Masonic Orphan Asylum, Oxford, June 23.

OHIO

Summer School at Sanatorium.—Twenty-five physicians of the state registered for a special two weeks' course in the treatment of tuberculosis at the State Sanatorium, Mount Vernon.

Clinic as Soldiers Memorial.—The memorial of Summit County to soldiers in the World War, will it is expected, be in the form of a health clinic building and fund. This building will be in memory not only of the men from Summit County who died in the World War, but also of those who died in the Spanish-American War and the Civil War.

Personal.—Dr. Ora O. Fordyce, superintendent of the Athens State Hospital will, it is announced, be transferred to the Toledo State Hospital, July 15, succeeding Dr. George R. Love, whose resignation takes effect on that date.——Dr. T. Addison McCann, Dayton, has been appointed a member of the state medical board.——Dr. Mary A. Wilson, Delaware, for six years chief medical officer of the Delaware Girls Industrial School, has resigned.——Dr. Lot H. Hughes, for twenty-five years local surgeon of the Pennsylvania system at Denison, has resigned and has been succeeded by Dr. Edmund A. Wolfe.

Decision Regarding Venereal Disease.—The Hamilton County Common Pleas Court in a case in which the constitutionality of the venereal disease regulations of the state were attacked has upheld the regulations. The case was a habeas corpus proceeding brought by an alleged prostitute who had been held by the Cincinnati Health Department as a person reasonably suspicious and who, being found infected, had been placed under quarantine as provided by the state regulation. The release of the petitioner was demanded on the grounds that she was deprived of liberty on suspicion and that she had not been granted trial by jury. In dismissing the case the court stated that the health authorities had as clear a right to quarantine persons afflicted with venereal disease as to quarantine a person exposed to smallpox or scarlet fever, and that the question of jury trial was not concerned in the case, as the petitioner was not held on a criminal charge.

PENNSYLVANIA

Doctors' Licenses Revoked.—The licenses of seven physicians who violated the drug act have been revoked according to an announcement made, June 27, by the State Bureau of Medical Education and Licensure. The board has also suspended five other medical men and revoked for three months the license of Dr. Elizabeth M. Baer, Philadelphia, now serving a sentence for sedition.

Personal.—Dr. George K. Strode, Harrisburg, has been appointed assistant chief health inspector of the department of health of Pennsylvania.——William H. Leffler, Capt., M. C., McKeesport, has been cited for bravery by Marshall Petain in the name of the French government. He received the Croix de Guerre, April 13, and was made regimental surgeon of the Twenty-Third Infantry.

Power for Health Board.—The senate passed finally the house bill broadening the powers of the commissioner of health and the advisory board under the quarantine act of 1915. Under the bill the commissioner of health, with the approval of the advisory board, may determine what are communicable diseases and provide for the quarantine of such diseases. This law was found necessary after the difficulty encountered in the influenza epidemic of last fall. The act also enables the department of health to carry out its venereal campaign in a conservative manner.

Philadelphia

Personal.—O. H. Perry Pepper, Major, M. C., U. S. Army, who is at a base hospital in France, has been promoted to lieutenant colonel.——Robert G. LeConte, Lieut-Col., M. C., U. S. Army, who went to France with the Methodist Hospital Unit, and was naval consultant for Pershing's forces, has been made a chevalier of the Legion of Honor.——George M. Coates, Col., M. C., U. S. Army, who was commanding officer of Base Hospital No. 50 up to the time the armistice was signed, following which he went to Dijon and St. Agilon as an ear, nose and throat specialist, has returned home.——Dr. Thomas C. Stellwagen is winning a plucky fight for his life which he has been making for a number of weeks in a private hospital in Media, where he has undergone five operations for an infection contracted while operating with a movable unit in France.——The senate confirmed the appointment of John D. McLean as deputy commissioner of health.

UTAH

State Medical Board Organizes.—At the meeting for organization of the Utah State Board of Medical Examiners, Dr. David C. Budge, Logan, was elected president; Dr. Frederick E. Straup, Bingham, vice president, and Dr. George F. Harding, Salt Lake, secretary-treasurer.

Personal.—John F. Sharp, Lieut.-Col., M. C., U. S. Army, Salt Lake City, division surgeon of the Fortieth Division, and later of the Sixth Division of the American Expeditionary Forces in France, returned home, June 16.

Community Clinic Opens.—The free community clinic and dispensary, Salt Lake City, financed by the business and professional men of Salt Lake City, was formally opened, June 2. Six physicians are on duty daily at the clinic, and any church, lodge, or charitable organization is privileged to send persons needing and unable to pay for medical attention.

CANADA

University News.—A tablet was recently unveiled in the New Medical Building, McGill University, to the memory of nine medical students who lost their lives in France. Dr. George E. Armstrong, acting dean of the medical faculty, delivered an address as the tablet was unveiled.——Prof. J. George Adami, McGill University, is to leave that institution to accept the vice chancellorship of Manchester University, England.

Personal.—Dr. William A. Harvie, returned from overseas with the Saskatchewan Hospital Unit, has recovered his health and resumed practice in Regina.——Dr. Harvey Clare, assistant superintendent of the Hospital for the Insane, Toronto, and superintendent of the Toronto Detention Hospital, has been appointed a general medical officer superintending all the hospitals for the insane and acting in an advisory capacity to the provincial secretary.

Free Medical Course to Overseas Men.—Speaking at the banquet in Quebec last week given by the Quebec physicians to the delegates to the Canadian Medical Association annual meeting, the president, Dr. Grondin, stated that arrangements had been made whereby Laval medical department offered a free course in study to young Canadian doctors who had been overseas. In return the English universities in Canada would be asked to extend similar privileges to French-Canadians in any part of Canada.

Hospital News.—The members of the medical staff of the Regina General Hospital have advised the governors that a new wing for the treatment of the sick is advisable rather than a new residence for the nurses of the institution.——The Sisters of the Grey Nuns Hospital, Regina, Sask., have decided on a new wing for their institution.——The hospital board of the Winnipeg General Hospital is planning a yearly clinic week to which physicians from all parts of western Canada will be invited. It is also proposed to establish an interns' alumni society to bring former members of the house staff together.——The Winnipeg General Hospital is opening a psychopathic ward which is to be in charge of Dr. Alvin T. Mathers, supervisor of the psychopathic department at Johns Hopkins.——Saskatchewan has selected Weyburn as the site of the proposed mental hospital erected by the government of that province. Dr. Robert M. Mitchell, speaker of the Saskatchewan assembly, has been appointed the superintendent of the hospital. The cost of the institution has been $1,000,000. It will have a capacity of 1,600 beds when completed.

GENERAL

Drop Germans from Membership.—The American Surgical Association, at its annual meeting in Atlantic City, June 17, voted unanimously to drop all German and Austrian honorary fellows from its roll of membership.

Psychanalysts Meet.—The ninth annual meeting of the Psychoanalytic Association was held in Atlantic City, June 20. In the absence of the president, Dr. G. Stanley Hall, Worcester, Mass., Dr. Smith Ely Jelliffe, New York City, presided. The following officers were elected: president, Dr. Abraham A. Brill; vice president, Dr. Horace W. Frink, and secretary-treasurer, Dr. William A. White, all of New York City.

Medical Librarians Hold Meeting.—The twentieth annual meeting of the Medical Library Association was held in Atlantic City, June 9, under the presidency of Dr. William Browning, Brooklyn. The object of the association is to foster the medical libraries and the maintenance of an exchange system. Any medical society, association, university or college having a fixed home and a library of not less than 500 volumes, with a librarian in charge, is

eligible for membership. The annual dues for library membership are $10, and for individual membership, $5.

New Regulations Governing the Sale of Alcohol.—The Bureau of Internal Revenue on June 30, issued regulations governing the sale of alcohol for medical purposes. The regulations state that "Physicians may prescribe wines and liquors for internal use or alcohol for external use, but in every such case each prescription shall be in duplicate and both copies be in the physician's handwriting." The quantity prescribed for such a patient in a given time shall not exceed 1 quart. In no case shall a physician prescribe alcoholic liquors unless the patient is under his constant supervision. All prescriptions must indicate clearly, the patient's name, street address, and apartment number, if any, the date when written, the condition or illness for which prescribed and the name of the pharmacist to whom the prescription is to be presented. Similar detailed restrictions for the sale of alcohol by drug stores have also been promulgated.

Additional Research Appropriations.—At a meeting, June 20, the United States Interdepartmental Social Hygiene Board approved applications for appropriations from its scientific research fund "for the purpose of discovering . . . more effective medical measures in the prevention and treatment of venereal diseases," as follows:

YALE UNIVERSITY MEDICAL SCHOOL

1. (*a*) "Effect of anilin dyes, particularly gentian violet on the gonococcus with reference to the growth of the organism in media containing the dye, and with reference to the effect on organisms in tissue (therapeutic effect)." Under the direction of Joseph M. Flint, M. D., and John W. Churchman, M.D., Professors of Surgery.

(*b*) "An intensive study of methods for the isolation and identification of the gonococcus with a view to the determination of the homogeneity or heterogeneity of strains and their etiological relationships." Under the direction of George H. Smith, M.D., Assistant Professor, Department of Pathology and Bacteriology.

(*c*) "The demonstration of syphilitic nature of unusual lesions encountered at the postmortem table." Under the direction of Milton C. Winternitz, M.D., Professor of Pathology and Bacteriology.

UNION UNIVERSITY MEDICAL DEPARTMENT, ALBANY

2. "For studies on the nature of the Wassermann reaction." Under the direction of Thomas Ordway, M.D., Dean and Associate Professor of Medicine.

The United States Interdepartmental Social Hygiene Board is composed of: Carter Glass, Secretary of the Treasury; Newton D. Baker, Secretary of War; Josephus Daniels, Secretary of the Navy; Lieut.-Col. William F. Snow, Medical Corps, U. S. A.; Lieut.-Com. Joseph R. Phelps, Medical Corps, U. S. N.; Asst. Surg.-Gen. Claude C. Pierce, U. S. Public Health Service, and Thomas A. Storey, Executive Secretary.

Up to June 21, the Board had approved appropriations from its Scientific Fund for twenty researches distributed among twelve medical schools.

Rockefeller Foundation and Epidemics.—The review of the work of the Rockefeller Foundation for 1918 tells of the development of its efforts to eradicate malaria and yellow fever from certain districts. In four towns in Arkansas antimosquito work was carried out with marked success, and the result was a reduction in malaria cases of 97.4 per cent. as compared with 1916, and an antimalarial campaign was also carried out in Mississippi with the cooperation of the board of health of that state.——Major-Gen. William C. Gorgas, formerly Surgeon-General of the United States Army, and, after his retirement, director of the yellow fever work of the International Health Board, has just returned from a trip to South America in an endeavor to determine the seed beds of yellow fever, and institute systematic measures to destroy the disease at its source.——On account of a yellow fever epidemic in Guatemala, in June, 1918, the International Health Board tendered its services to the president of Guatemala, and sent Dr. Joseph H. White, U. S. P. H. S., recently released from the Army and granted leave by the Public Health Service, to Guatemala, where he established quarantine, drafted physicians into service, and so placed well-tested measures for the control of yellow fever in effect that the epidemic was brought promptly under control. ——In June of last year a commission was sent to Guayaquil, Ecuador, for the study of, and to record information regarding the sanitary condition of Ecuador, and the bacteriologic, chemical and clinical aspects of yellow fever. Measures for yellow fever control were actively inaugurated in Ecuador, Nov. 27, 1918, and by the end of December, twenty-five squads of five men each, were systematically engaged in the destruction of the stegomyia mosquito.

Mortality Statistics.—The annual compilation of mortality statistics by the U. S. Census Bureau for the death registration areas in the continental United States for 1917, shows that during the year, 1,068,932 deaths occurred, equivalent to a death rate of 14.2 per thousand. Of these deaths fully one third were due to heart disease, pneumonia and tuberculosis; another third to nephritis, cerebral hemorrhage, cancer, diarrhea and enteritis, arterial disease, influenza, diabetes, diphtheria and bronchitis. The death registration area at this time included twenty-seven states, the District of Columbia, and forty-three cities in nonregistration states, with a total population of about 75,000,000. The general causes of deaths were as folows: heart disease, 115,337, or 153.2 per hundred thousand; pneumonia, 112,821, or 149.8 per hundred thousand; tuberculosis, 110,285, or 146.4 per hundred thousand; nephritis, 80,912, or 107.4 per hundred thousand; cerebral hemorrhage, 62,431, or 82.9 per thousand; malignant disease, 61,452, or 81.6 per thousand; diarrhea and enteritis, 59,504, or 79 per hundred thousand; arterial disease, 19,055, or 23.3 per hundred thousand; influenza, 12,975, or 17.2 per hundred thousand; diabetes, 12,750, or 16.9 per hundred thousand; diphtheria, 12,453, or 16.5 per hundred thousand; bronchitis, 12,311, or 16.3 per hundred thousand; typhoid fever, 10,113, or 13.4 per hundred thousand; measles, whooping cough and scarlet fever, 31,723, or 28.8 per hundred thousand, and external causes, 81,953, or 108.8 per hundred thousand. The chief causes of accidental deaths were in order, falls, railroad accidents and injuries, burns, automobile accidents and injuries, accidental drowning, and accidental asphyxiation, vehicles, street cars, machinery and insolation. The suicides for the year were 10,056, or 13.4 per hundred thousand, and the deaths from other external causes, including homicide, 10,053, or 13.4 per hundred thousand. The death causes that show a decrease as compared with 1916, are: heart disease, pneumonia, diarrhea and enteritis, malignant disease, influenza, diabetes and typhoid fever. Death causes showing an increase are: tuberculosis, nephritis, cerebral hemorrhage, arterial diseases, diphtheria, bronchitis, measles, whooping cough and scarlet fever.

FOREIGN

Maternity and Infant Welfare Schemes.—The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy (4 and 5, Tavistock Square, London, W.C.I.) held a national conference on infant welfare as part of the National Baby Week celebrations, at the Kingsway Hall, Kingsway, London, W.C.I., July 1 to 3, under the presidency of the Rt. Hon. Christopher Addison, M.P., M.D. The following subjects were discussed: (*a*) Antenatal and neonatal mortality and its prevention; (*b*) the work of the midwife in relation to antenatal and neonatal mortality; (*c*) the industrial employment of mothers in relation to infant mortality; (*d*) the illegitimate child.

RIO DE JANEIRO LETTER

RIO DE JANEIRO, June 7, 1919.

Sporadic Case of Yellow Fever in Rio de Janeiro

In the month of May a case of yellow fever occurring in a patient coming from the state of Bahia on a Brazilian steamer was reported. The patient was immediately isolated and died the next day. Strict measures were taken to prevent the spread of the disease. No new case has been reported.

Eradication of Yellow Fever in the Northern States of Brazil

The federal government, in agreement with the state authorities, has sent sanitary commissions to the states of Bahia, Alagoas, Sergipe and Ceará, with a view of exterminating yellow fever in these states. Since Emilio Ribas and Oswaldo Cruz succeeded in stamping out this disease in São Paulo and in Rio de Janeiro, respectively, similar work has been carried on with good results in Amazonas, Pará and Espirito Santo.

There remain still five other states in the north of Brazil in which yellow fever is endemic and to which the government will send experts of the federal staff in order definitely to eradicate the disease. When this work is done, Brazil can be considered free of yellow fever.

Session Held in Honor of Prof. Miguel Pereira

The National Academy of Medicine, the oldest medical association in Brazil, held a session, May 31, in honor of M. Pereira, lately deceased. The secretary of the interior presided. Three addresses were delivered lauding the late member as physician, writer and professor. Miguel Pereira was one of the most brilliant speakers of his day. He was a

born fighter, and his slogan "Brazil is a vast hospital" still rings throughout the land.

As a rallying cry it accomplished much good, although it may be considered an exaggeration, for soon after its adoption the government took the first steps to combat various endemic diseases, such as malaria and hookworm disease. Miguel Pereira was comparatively a young man, being only 46 years of age when he died, Dec. 23, 1918.

Death of João Florencia Gomes

Influenza has claimed another victim among the physicians of Brazil. João Florencia Gomes, late assistant of the Instituto de Butantan, São Paulo, died of influenza the last week in May. He was a brilliant member of the institute and his works on serpents are well known in scientific circles. It was his purpose to go to the United States to study pathologic anatomy at the Rockefeller Institute for Medical Research.

Rural Sanitation in Minas and Acre

The government has divided the territory of Acre into four divisions. To each one a medical commission has been assigned in order to combat malaria and hookworm, all expenses being paid by the government. The same service was initiated in the state of Minas, the federal government paying one third of the expenses.

Scientific Works of Dr. Adolpho Lutz

Dr. Adolpho Lutz has published an interesting work on Brazilian fresh water snails of the genus *Planorbis*, intermediate hosts of trematode parasites of man and animals (*Schistosomum mansoni*). The author gives a list of other Brazilian and South American species as found in literature, giving descriptions and drawings. A key to aid in distinguishing Brazilian genera is included. Six new species are described.

In the company of Dr. Oswino Penna, Dr. Adolpho Lutz made an excursion to the north of Brazil collecting notes on *Schistosomum*. During the journey notes of 312 coprologic examinations were taken. Of the 312 specimens examined, seventy-one contained eggs of *Schistosomum*, giving an average of 22.75 per cent.

MADRID LETTER

MADRID, April 15, 1919.

Retirement of Medical Professors and Hospital Physicians

The government has adopted new regulations relative to the retirement of government employees. The many abuses and the favoritism shown in deciding the age at which any particular employe should be retired, caused the adoption of new regulations according to which professors will retire at 71 years of age. Among the prominent physicians to whom the new regulations will apply, are Dr. Florencio de Gastro, the well known surgeon; Dr. Ildefonso Rodriguez, professor of the history of medicine in the University of Madrid, and Dr. Antonio Chacón, the famous gynecologist. The same law has been extended to embrace the public assistance physicians and, as most of the hospitals in Madrid belong to this department, one of those who have to give up their positions is Dr. Huertas, a physician of great repute in Spain.

Compulsory Vaccination in Madrid

It is interesting that in our country law-making bodies seem to have foreseen every little detail neglected in countries having the most advanced legislation to such an extent that our codes seem model ones from many viewpoints, although on account of the national apathy many of the laws remain unenforced. This happened with the provisions enacted a long time ago for the prevention of smallpox. Vaccination was compulsory and was enforced in the large cities for young children but revaccination was only practiced by the higher classes. Most of the rural population neglected to vaccinate themselves in spite of all recommendations. The result has been that smallpox was so prevalent among the poorer classes as to constitute a disgrace for the capital and since vaccination was not enforced in the neighboring provinces and revaccination was neglected among most of the people at Madrid, smallpox was constantly ravaging the masses of the population, especially store employees, servants, workmen, etc., and during the last decade, in addition to the usual outbreaks, we have had three serious epidemics, the last one last winter. When smallpox was most prevalent recently, Don Leopoldo Romeo, a newspaper man and great admirer of the United States, was appointed governor of the province of Madrid. He formed the resolution of ending the constant menace of smallpox and ordered the enforcement of the laws that made vaccination and revaccination compulsory and which had been neglected so far. It was enough to threaten people with the imposition of fines to have everybody at Madrid either vaccinated or revaccinated. Two physicians of the so-called "naturopaths" went to the governor protesting against the vaccination regulations. The governor, after listening to them, fined them each 500 pesetas ($100) for opposing the enforcement of the law and inducing others to oppose it and, in addition, threatened them with another fine if they resisted vaccination. The two propagandists decided that it was better to be vaccinated than fined and followed the general example. In the San Juan de Dios hospital, where the smallpox patients are attended, these have numbered 300.

An Itch Outbreak

Madrid has been struggling with a small outbreak of itch which has been the result of another undertaking of the governor. One of the characteristics of which Madrid is not very proud, in spite of its picturesqueness, are the *pobres* (beggars), who, until not so long ago, filled in such great numbers practically every city and village of Spain. The mayors of some towns, Santander, Seville and others, determined to put an end to this type of professional beggar that shows his rags with a sort of pride, exhibits his sores and bothers passers-by with his entreaties. As a result, the beggars disappeared from those towns but in Madrid our authorities have, it seems, been so busy with other things that they could not attend to this matter. From time to time, some enterprising official has rounded up all the beggars, but this has been done under such unfortunate circumstances that everybody feared to read news to this effect since outbreaks of typhus fever have followed, on two occasions, the crowding of beggars in places lacking the necessary sanitary conditions. One of these outbreaks ended only when it exhausted itself after attacking more than 1,000 people. The last of these beggar roundings-up has been followed by results not so serious, since it has just caused the spread of itch, giving some more work to the physicians and nurses of the abovementioned San Juan de Dios hospital which was one of the first established in the world for skin and venereal diseases. The worst part of the whole happening was that there arose a question of jurisdiction between the governor who ordered the gathering of the beggars and the police authorities who had no place to keep their charges and were therefore compelled to release them. As a result the campaign came to an end and the beggars flourish now more than ever, practically everywhere, with more complaints than ever and prouder, if that can be, of their poverty and their sores. Cervantes, Mateo Alemán, Quevedo and other classical writers can find followers among modern authors for their models of beggars and hoboes are still a thing of the day in the life of Madrid.

A Sanitary Campaign

Four physicians of noble aims are carrying out a sanitary campaign with the greatest enthusiasm. Dr. Cortezo, the former minister and president of the Royal Academy of Medicine and editor of the *Siglo Médico;* Dr. Francos Rodrigues, former minister and journalist; Dr. Recasens, dean of the School of Medicine of Madrid, the most famous gynecologist of Spain and physician to the queen; and Dr. Juarros, the psychiatrist and writer, have united in this enterprise and are traveling from town to town where any hygienic question may arise or some danger may exist to the public health or some sanitary improvement may be made, giving conferences in practically every public place as part of a campaign of propaganda of hygienic ideals which may tend to the betterment of the race and to avoid epidemics and suffering. They have shown that the people may become interested in questions which are not political and the loftiness of their purposes has served to attract first the curiosity of the people and then their interest so that they have been now joined by persons belonging to all the political parties and many others who are not in politics and belonging to all social classes.

The Death of Dr. Francisco Cortejarena

Dr. Francisco Cortejarena, first president of the Royal Academy of Medicine, has died rather suddenly at the age of 84 years. For a few hours before his death he was still at the club as usual, talking with those present. One could say of him that he was the representative of the glorious past of medicine, as he always took part at the end of the most bitter medical debates to call attention to the history of our science and make people feel that even the most recent and destructive medical theories were nothing but new labels for

forgotten doctrines, and his personal manner was so charming and engaging that it pleased the two sides and convinced even the most rabid partisans. His autobiography is a model of its kind, and all those interested in medicine in the last part of the 19th century will have to resort to it as he made a careful note day after day of everything he either did himself or witnessed. He was for a time director general of public health and was also a member of the senate, where he took part in the enactment of the modern sanitary legislation. For many years he was a professor in the School of Medicine of Madrid where all the present teachers take pride in calling themselves his pupils.

LONDON LETTER

LONDON, June 11, 1919.

The Ministry of Health and the Control of Nostrums

In the House of Lords the lord chancellor, according to his promise, mentioned in my last letter, moved an amendment to the ministry of health bill that the ministry should be responsible for prosecutions for "patent medicine" frauds. The amendment provides that the ministry shall "take all such steps as may be desirable to secure the carrying out of measures for the avoidance of fraud in connection with alleged remedies of diseases." The lord chancellor said that "patent medicine" frauds could, under the existing law, be attacked only on the charge of obtaining money by false pretenses. These were very difficult prosecutions, and more often than not failed. The course which ought to be adopted was to strengthen our legislation, and in this connection he reminded the house of the recommendation of the select committee on "patent medicines" in 1914: "Your committee further recommends the following legislative enactments: 1. That every medicated wine, and every proprietary remedy containing more alcohol than that required for pharmacologic purposes, be required to state on the label the proportion of alcohol contained in it. 2. That the advertisement and sale (except the sale by a physician's order) of medicines purporting the cure of the following diseases be prohibited: cancer, consumption, lupus, deafness, diabetes, rupture (without operation or appliance). 3. That all advertisements of remedies for diseases arising from sexual intercourse or referring to sexual weakness be prohibited. 4. That all advertisements likely to suggest that a medicine is an abortifacient be prohibited." These recommendations had quite recently been discussed by the government, and the lord chancellor was authorized to say that the government concurred in them. A very early attempt would be made to carry out in a separate bill these specific recommendations.

The Vivisection of Dogs

The strong medical opposition organized against the bill for the prevention of vivisection of dogs has proved effective. It may be remembered that the bill prohibited any experiment of a nature calculated to give pain or disease to any dog for any purpose whatever, either with or without anesthetics. The government amendment excepts cases in which for reasons specified in the certificate the experiment would necessarily be frustrated unless it is performed on a dog, and no other animal is available for such an experiment. The undersecretary for the home department said that the object of the bill was the absolute prohibition of experiments on dogs, but the amendment would give an additional precaution and further supervision of all experiments on this animal and so make it impossible, as indeed it already was, to inflict on a dog during the course of any experiment anything but the most limited and short-lived pain. The government, while prepared to protect the few dogs experimented on, was not prepared to go against the overwhelming mass of experience and scientific opinion and prohibit absolutely experiments on dogs. Under the existing act, the great majority of the operations on dogs were simply inoculations or the cutting of small veins which did not in the majority of cases interfere with the comfort or health of the dog. When a severe operation was to be performed, the application for a license was referred to a comittee of seven of the most distinguished scientific men. A series of drastic conditions dealing with the antiseptic treatment of wounds was laid down. The amendment was carried by 147 to 69 votes, and the title of the bill was altered from "A Bill to Prevent the Vivisection of Dogs" to "A Bill to Impose Further Restrictions on the Vivisection of Dogs."

War Census of Medical Students

At the opening of the summer session of the General Council of Medical Education, the president, Sir Donald Macalister, gave returns showing the number of students taking courses of instruction. They were: October, 1917, 7,048; May, 1918, 7,630, and January, 1919, 9,490. Between May, 1918, and January, 1919, the first-year students had increased from 2,043 to 2,907, as compared with 1,480 registered in 1913. The junior students had thus practically doubled since the year preceding the war. But the students in the final year of their curriculum numbered only 936 men and 222 women, or barely enough to suppiy to the register the normal increment of newly qualified practitioners during the current year. First-year students who were on service have returned to the schools in almost overwhelming numbers for the summer session. The accumulated freshmen of a succession of years, whose first year's course was broken by the summons to military service, together with a number of educated men and officers entering for the first time on the medical curriculum with subsidies from the government, have flooded the schools and taxed severely their accommodation and their teaching staff. With the object of giving all practicable facilities to men who have fought for their country, equipment has been improvised and temporary instructors have been provided. At some centers it has even been necessary to refuse admission to normal students proceeding in the ordinary course from secondary schools to schools of medicine. Some of the difficulties felt this summer in dealing with numbers so far above the average will no doubt be lightened in the following years, as the professional schools are able to readjust their arrangements; but they cannot all be surmounted without heavy expediture, and it may be that the state will have to lend substantial assistance to enable these institutions to meet the needs of ex-service students. In any case it seems certain that within five years' time the depletion in the ranks of the profession caused by the war will be much more than made good.

American Graduates in London

The emergency graduate course instituted by the Fellowship of Medicine (described in previous letters) has proved very successful. A meeting of more than 100 American medical officers attending the course has been held to form an association in appreciation of the facilities afforded to them. Combined efforts to familiarize their countrymen with the exceptional clinical facilities offered by the London medical schools and hospitals were agreed on. An American medical graduates' society is to be founded in London for the benefit of American physicians visiting the British Isles, and also to foster the present cordial relations between the medical profession of the two countries. Mr. Philip Franklin, F.R.C.S., a London otologist and laryngologist who is an American citizen, has been elected honorary president, and Lieut.-Col. S. C. Gurney, U.S.M.C., president.

Vital Statistics for 1917

The report of the registrar-general for 1917 has just been issued. The figures are of course much influenced by the war. The total civilian population of England and Wales was estimated to be 14,085,300 males, and 19,625,700 females. The marriages number 258,855, giving the lowest rate yet recorded. The births numbered 668,346, being 117,174 fewer than in 1916. The birth rate again shows a fall for some years, and this is continued. In 1913 the rate was 24.1 per thousand; 1914, 23.8; 1915, 21.9; 1916, 20.9; 1917, 17.8. The 1917 rate is almost exactly 50 per cent. of the rate for the decennium 1871-1880, the rate prevailing before the downward trend. The death rate was 14.4 per thousand; corrected to the 1901 standard population, the standardized rate was 13.5. A lower rate has been recorded only twice; but if allowance is made for the deterioration of the civilian population, owing to military selection, it is probable that the rate for 1917 is not inferior to that of any other year. The child mortality was low. The number of deaths per thousand births of children under 1 year was 96. For the first time the number of deaths due to typhoid fever was less than 1,000 (977). The death rate from other infectious diseases was low. That from tuberculosis was 13 per cent. greater than in 1913. This is attributed to the dietetic restrictions of the war, particularly the deprivation of fats. Deaths attributed to cancer, 41,158, give the highest rate yet recorded. Taking the interval of nineteen years from 1897-1918 to 1916-1917, the mortality from accessible cancer has increased 56 per cent. among males, while inaccessible cancer has increased only 41 per cent. Hence the increase cannot be explained by improved diagnosis. The mortality from alcoholism has decreased, which is attributed to the restriction in the output and sale of alcoholic liquors during the war.

Marriages

MICHAEL FRANCIS CLAFFEY, Lieut., M. C., U. S. Army, Naugatuck, Conn., on duty at U. S. General Hospital No. 12, Biltmore, N. C., to Miss Helen Delpire of Chicago, at Asheville, June 30.

CARL ALEXANDER WEST, Lieut., M. C., U. S. Army, Columbia, S. C., on duty with the American Expeditionary Forces in France, to Mlle. Odette Voirin of Bar-le-Duc, France, May 10.

JOHN W. WHITEHEAD, Lieut., U. S. N. R. F., Algiers, Ind., to Miss Bernice Hobbs of Hillsboro, Ind., at Jasper, Ind., June 16.

WILLIAM JAMES BASLER, JR., Mont Alto, Pa., to Miss Mathilda O. Tejge of Philadelphia, at Hummelstown, Pa., June 18.

WEBSTER WHITALL BELDEN, Capt., M. C., U. S. Army, to Miss Martha Hall Hennen, both of New York City, recently.

SAMUEL ARTHUR VAN OSDEL to Miss Clara Millow, both of Johnson, Neb., in New York City, recently.

J. H. EUGENE ROSAMOND, Memphis, Tenn., to Miss Inez Fennell of Walnut Hills, Cincinnati, June 7.

JAY HERBERT WALLAHAN to Miss Ruth Marsh, both of Corning, Iowa, at Des Moines, June 4.

GEORGE WENDELL DUNLAP, Toledo, Ohio, to Miss Mary A. Jacobson of Chicago, May 31.

HENRY MORGAN WINANS to Miss Judith Terrell Hawley, both of Denver, recently.

JAMES STANLEY WILLIAMS to Miss Ruth Hess, both of Massillon, Ohio, June 7.

JOHN FRANKLIN CONNER to Miss Emma Ehrhardt, both of Sidney, Ohio, June 2.

KESHAVA DEVA SHASTRI to Miss Minnie Jensen, both of Omaha, June 4.

Deaths

William Hugh Carroll ● Passaic, N. J.; New York University, New York City, 1884; aged 58; visiting surgeon to the Passaic General Hospital, and to the Passaic Home and Orphan Asylum; once president of the Passaic County Medical Society; for four years a member of the state board of health; one of the founders of the New Jersey Surgical Society and of the Passaic General, and St. Mary's hospitals; died in the Passaic General Hospital, June 20, from heart disease.

Rolla M. Chase, Bethel, Vt.; Baltimore Medical College, 1890; aged 62; a member of the Vermont State Medical Society; also a graduate in dentistry; once president of the state dental society and chairman of the state board of dental examiners; first president of the Bethel Electric Light and Power Company and vice president of the Bethel Shoe Company; for three years a member of the local school board; died at his home, June 10, from nephritis.

Arthur Brigham Norton, New York City; New York Homeopathic Medical College, New York City, 1881; aged 62; professor of ophthalmology in his alma mater from 1902 to 1907; oculist to the Hahnemann and Laura Franklin Free hospitals; for thirty-five years surgeon to the New York Ophthalmic Hospital; founder and for ten years editor of the *Homeopathic Eye, Ear and Throat Journal;* died at his home, June 18, from pneumonia.

John T. Nagle ● New York City; New York Medical College, New York City, 1864; aged 77; a member of the American Public Health Association; for thirty years an official of the health department of the city of New York; registrar of records of the health department of the city of New York and later chief of the bureau of municipal statistics; assistant surgeon, U. S. Army, during the Civil War; died at his home, June 14.

Hugh Forbes McGaughey ● Winona, Minn.; College of Physicians and Surgeons in the City of New York, 1896; aged 45; one of the best known surgeons of Southern Minnesota; local surgeon of the Northwestern and Burlington system; died in Tacoma, Wash., June 20, in an ambulance in which he was being taken from a Tacoma hospital to the Western Washington Hospital for the Insane, Stellacoom.

Frederick Wallace Abbott, Taunton, Mass.; Eclectic Medical College of Maine, Lewiston, 1886; aged 58; associate editor of the *Massachusetts Medical Journal* from 1894 to 1904, and of the *American Medical Journal* since 1906; professor of medical history and medical ethics in the Middlesex College of Medicine and Surgery, Boston; died at his home, June 19, from the effects of an accident five months before.

Richard Ewell Brown ● New York City; New York University, New York City, 1894; aged 49; a fellow of the New York Academy of Medicine; attending surgeon to the Lying-In Hospital, New York City, from 1897 to 1905; assistant attending physician to the Manhattan Maternity Hospital; a specialist in obstetrics; died at his home, June 14, from cerebral hemorrhage.

William A. Cusick, Salem, Ore.; Willamette University, Salem, Ore., 1867; aged 81; a member of the state legislature in 1885 and 1886; a member of the first faculty of his alma mater; for two years surgeon in the army; for several years consulting physician at the State Hospital, and for five years physician to the state penitentiary; died at his home, June 16.

Thomas H. Tomlinson, Plainfield, N. J.; University of Pennsylvania, Philadelphia, 1859; aged 82; a member of the State Medical Society of New Jersey; who celebrated his golden wedding, Dec. 30, 1918; dean of the medical fraternity of Plainfield; a member of the original staff of Muhlenburg Hospital; died at his home, June 22, from pneumonia.

Clarke Storer Gould ● Norwood, Mass.; Harvard Medical School, 1888; aged 55; who served during the war as captain, M. C., U. S. Army, at Camp Sherman, Chillicothe, Ohio, and was honorably discharged, Dec. 27, 1918, died in the Peter Bent Brigham Hospital, Boston, March 28, from general septicemia following a cellulitis of the neck.

James F. Jones, Sherman, Texas; University of Texas, Galveston, 1899; aged 46; a member of the State Medical Association of Texas; for two years assistant surgeon of the Mexican Central Railway; died in St. Vincent's Sanitarium, Sherman, June 12, as the result of injuries sustained in a grade crossing accident, June 9.

Walter Keene Wilkins, New York City; Bellevue Hospital Medical College, 1886; aged 66; assistant physician at the Ward's Island Insane Hospital from 1887 to 1890; who was convicted on June 27, of the murder of his wife; committed suicide by strangulation in the Nassau County Jail, Mineola, N. Y., June 29.

Ralph H. Watkins, Wolcott, N. Y.; University of Syracuse, N. Y., 1883; aged 58; a member of the Medical Society of the State of New York; at one time coroner and health officer of Wayne County; died in the General Hospital, Rochester, N. Y., June 18, after an operation for cerebral tumor.

N. Fred Essig ● Spokane, Wash.; University of Pennsylvania, Philadelphia, 1868; aged 70; formerly president of the Washington State Board of Health; a member of the National Association of Railway Surgeons; died in the Mayo Brothers' Hospital, Rochester, Minn., June 8, from nephritis.

Joseph Mark Doyle, Brooklyn (license, New York, 1882); aged 55; for nineteen years connected with the Queens County Department of Health and for many years of the Kings County Inebriate Home; died at his home, June 17, three weeks after a surgical operation.

Jacob W. Coblentz, Fort Wayne, Ind. (license, Indiana, 1897); aged 80; whose license is said to have been revoked for fraud; died in a store in Fort Wayne, June 18, from the effects of cyanide of potassium, self-administered, it is believed, with suicidal intent.

T. E. McBrayer, Shelby, N. C.; College of Physicians and Surgeons, Baltimore, 1879; aged 70; a member of the Medical Society of the State of North Carolina, and a prominent physician of western North Carolina; died at his home, June 25, from carcinoma of the liver.

Leon J. Willien ● Terre Haute, Ind.; Washington University, St. Louis, 1867; aged 78; one of the founders of St. Anthony's Hospital, Terre Haute, and for several years president of the staff; surgeon to St. Mary's Institute; died in St. Anthony's Hospital, June 17.

Alfred M. Adsit ● Hastings, Minn.; Columbus (Ohio) Medical College, 1881; aged 62; physician to the Hastings State Hospital; died in St. Joseph's Hospital, St. Paul, June 17, after an operation for appendicitis and the removal of gallstones.

● Indicates "Fellow" of the American Medical Association.

Milford Bard Shipp, Jr., Salt Lake City; Jefferson Medical College, 1891; aged 52; died in the Latter Day Saints Hospital, Salt Lake City, June 11, from the effects of a gunshot wound inflicted by a patient in an altercation over treatment.

Rosavelle Gardner Philip, Stamford, Conn.; Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1875; aged 72; a member of the Connecticut State Medical Society; died at her home, June 11.

Meverell Knox Allen, Louisville, Ky.; University of Louisville, Ky., 1867; aged 72; once health officer of Louisville; medical director of the Intersouthern Life Insurance Company; died at his home, March 13, from arteriosclerosis.

David John Jones, Youngstown, Ohio; Rush Medical College, 1897; aged 52; formerly coroner of Columbia County, Ohio; died in Youngstown, June 16, from injuries sustained in a collision between his automobile and a street car.

Daniel Tucker McCall, Rome, Ga.; Medical College of Georgia, Augusta, 1872; aged 72; a Confederate Veteran; once physician of Floyd County, Ga., and a member of the Rome school board; died at his home, June 11.

Thomas W. Walker ✪ Steubenville, Ohio; Western Reserve University, Cleveland, 1889; aged 53; local surgeon to the Panhandle system, and surgeon to the Gill Hospital; died at his home, June 11, from cerebral hemorrhage.

Edward Hottle, Philadelphia; Jefferson Medical College, 1874; aged 71; for more than forty years employed by a firm of manufacturing chemists in Philadelphia; died at the home of his daughter in Wayne, Pa., June 8.

Henry Fowler Stowell, Rochester, N. Y.; College of Physicians and Surgeons in the City of New York, 1877; aged 71; a specialist in diseases of the eye and ear; died at his home, June 8, from senile debility.

Daniel Ross, Denison, Texas; Missouri Medical College, St. Louis, 1891; aged 54; a member of the State Medical Association of Texas; died in Harris, Mo., April 1, from cerebral hemorrhage.

Cornelius Augustus Ahearne, Lynn, Mass.; Harvard Medical School, 1866; aged 78; a member of the Massachusetts Medical Society; died at his home, April 16, from lobar pneumonia.

John Albert Crum, Marion, Mo.; Beaumont-Marion Sims Hospital Medical College, St. Louis, 1896; aged 51; died in St. Mary's Hospital, Jefferson City, Mo., April 4, from diabetes.

Edward Monroe McCoy, Huntersville, N. C.; North Carolina Medical College, Charlotte, 1894; aged 47; formerly city physician of Charlotte; died at his home, June 4, from heart disease.

William Clark Black, Tulsa, Okla.; Starling Medical College, 1890; aged 50; died in Tulsa in March, death being due to suicide while despondent on account of ill health.

Emil E. Nussle, Chippewa Falls, Wis. (license, Wisconsin, 1899); aged 66; a practitioner since 1874; died in St. Joseph's Hospital, Chippewa Falls, June 7, from heart disease.

Vandalier N. Swan, Maywood, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 71; died in the Oak Park (Ill.) Hospital, June 24, from septicemia.

Joseph J. Noeker, Detroit; Georgetown University, Washington, D. C., 1902; aged 42; who never practiced on account of ill health; died at his home, June 11.

Stephen L. Williams, Spring Garden, Ill.; American Medical College, St. Louis, 1879; aged 80; died at his home, June 4, from cerebral hemorrhage.

James D. McDonald, Clayton, Mich.; Cincinnati College of Medicine and Surgery, 1869; aged 78; died at his home in March from organic heart disease.

George Edwin Day, D.D., New York City; a graduate in medicine; aged 85; died at the home of his son in New York City, April 7, from heart disease.

Andrew J. Stovall, Jr., Sour Lake, Texas; University of Louisville, Ky., 1882; aged 62; died at his home, May 29, from cerebral hemorrhage.

Lloyd Arnold Jones, Hamilton, Ont.; University of Toronto, Ont., 1911; aged 31; died at his home, March 1, from pneumonia following influenza.

Charles Dodd Brewer, Springfield, Mass.; College of Physicians and Surgeons in the City of New York, 1882; aged 71; died at his home, June 3.

Chester Jackson McBride, Welland, Ont.; University of Toronto, Ont., 1909; aged 33; died at his home in March from pulmonary tuberculosis.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE ALLIED MEDICAL ASSOCIATIONS OF AMERICA

Another Rocket in the Pyrotechnics of Quasi-Medical Organizations

It was once said, in the days when diploma mills flourished, that it seemed easier to start a "university" than it was to open a grog shop. A study of quasi-medical organizations convinces one that it is easier to found a "medical society" than it is to establish a peanut stand. Most reputable practitioners of medicine who care to affiliate themselves with medical organizations are members of the American Medical Association, its component societies, or similar scientific bodies. It is not surprising, then, that those who live and move in the twilight zone of professionalism, from visionaries riding bizarre medical hobbies to those who have special interests to exploit, should create and make use of hybrid medical organizations. Such organizations multiply with the fecundity of rabbits. They flourish for a while, obtain more or less newspaper and other publicity—usually more, because of the sensational methods of those controlling them—then, having served the purpose of those who brought them into being, they lapse into innocuous desuetude.

The official accouchement of the Allied Medical Associations of America occurred, according to that organization's report, May 18, 1918. On the official stationery of the Allied Medical Associations of America in use in May, 1919, we find the names of the "Officers," "Censors," etc. These constitute, presumably, the more prominent members of this organization. We give briefly, some data regarding some of these so that a rational perspective may be obtained:

L. M. Ottofy, M.D., St. Louis, Mo.—Dr. Ottofy seems to have been the chief organizer, if not, indeed, the founder. He has been its "Secretary-Treasurer" since its inception; he is also "editor" of its journal. Ottofy, according to our records, was born in 1865 at Budapest, Hungary, and was graduated in 1888 by the Homeopathic Medical College of Missouri. In Polk's Medical Directories for 1914 and 1917, Ottofy has those extended notices which any physician can obtain who cares to pay for it. According to these notices, Ottofy is, or has been, affiliated with the following "societies":

President of the International Cancer Research Society.
Ex-President of the St. Louis Society of Medical Research.
Second Vice-President of the Missouri Institute of Homeopathy.
General Secretary of the American Association of Progressive Medicine.
Chairman of the Board of Censors of the Missouri Institute of Homeopathy.
Member of the American Institute of Homeopathy.
Member of the Southern Homeopathic Association.
Member of the American Association of Orificial Surgeons.
Member of the Southern Homeopathic Medical Society.
Member of the Kansas City Society of Medical Research.
Honorary member of the Chicago Society of Medical Research.

In December, 1911, numerous newspaper clippings show that Dr. Ottofy was obtaining much publicity relative to his antivaccination activities. At that time the papers reported that Ottofy was suing the St. Louis Board of Education for $25,000 damages, because the Board would not admit to the schools of the city a child he had "internally" vaccinated. In November, 1913, the St. Louis *Republic* reported that Ottofy had claimed to have discovered a serum for the cure of cancer, and quoted Ottofy as claiming "a record of 72 per cent. of cures" in "selected cases." In February, 1914, the newspapers reported that Ottofy was making a trip east "on the trail of radium for use in his practice in the cure of cancer" and quoted him as stating: "I have learned on good authority that there is radium in Missouri,

and just where I refuse to divulge at this time." In January, 1915, the St. Louis *Republic* reported that Ottofy, at a meeting of the "St. Louis Society of Medical Research," had announced that he had perfected a serum treatment for cancer, which "is curing patients who have been pronounced incurable by so-called 'cancer experts'." In January, 1916, the St. Louis *Star* reported that Ottofy had sought an injunction against the Board of Education of St. Louis to restrain it from using its funds for "the maintenance of a Board of Hygiene." In July, 1916, St. Louis papers recorded that Ottofy, who was then running for coroner, had been cited to appear before the Prosecuting Attorney to explain a charge of passing out, at a political meeting, a card alleged to have borne an indecent drawing of President Wilson. The Prosecuting Attorney was said to have instructed Ottofy to bring the plates from which the cards were printed to his office. Two days later the papers stated that Ottofy had sent the cards and plates by messenger to the prosecuting attorney's office.

IGNATZ MAYER, M.D., Detroit, Mich.—Mayer, "President" of the organization, according to our records, was born in Austria in 1860, and was graduated by the Medico-Chirurgical College of Philadelphia in 1894. Mayer, according to advertisements that have appeared in Detroit papers, is a "registered physician and surgeon specializing exclusively in the cure of rupture without detention from occupation." The Mayer advertisements have notified the ruptured of Detroit and vicinity (*via* Detroit newspapers) that hernia keeps one down in health and earning capacity and "there is no need for this. I have cured over 4,000 patients in twenty years continuous practice in the cure of rupture."

N. LA DOIT JOHNSON, M.D., Chicago.—Dr. Johnson's name appears as the "First Vice-President" of the Allied Medical Associations of America. A few years ago, Dr. Johnson's name also appeared as the "Dean of the Faculty" of the "American Post Graduate School." This "school" was a mail-order concern which, according to the "Annual Announcement," would grant diplomas and confer degrees as follows: "Master of Surgery," "Bachelor of Medicine," "Bachelor of Science," "Master of Electro-Therapy," "Doctor of Osteopathy," "Doctor of Psychology," "Master of Massage," etc.

H. M. GOEHRING, D.O., M.D., Pittsburgh, Pa.—The "Second Vice-President," according to the letterheads of the "Association" carries the letters D.O., M.D., after his name. So far as our records show, and they are most complete and based on official data, H. M. Goehring is an osteopath, but not a doctor of medicine.

A. E. ERLING, M.D., Milwaukee, Wis.—A. E. Erling, according to the stationery, is "Chairman" of "Censors." Our records fail to show that Erling ever graduated in medicine. The Health Department of Milwaukee, however, says that Erling, when interviewed, claimed to have "a diploma from the German Medical College of Chicago, but refused to show or present the same." The American Medical Directory has this item:

> *German Medical College*, Chicago. Chartered Dec. 28, 1891, by Johann Malok. Fraudulent. Extinct.

A few years ago Erling was in La Crosse, Wis., and in 1908 a circular letter bearing his name and picture was sent out from which the following extracts are taken. Capitalization as in the original:

> "Dear Friend:—Permit me to call your attention to the fact that Dr. A. E. Erling, the eminent specialist, after many years of travel, practice and medical research, has given up his extensive road practice and severed his connection with the several medical institutes which have heretofore occupied considerable of his attention . . . Dr. Erling's success in the treatment of all CHRONIC DISEASES is truly remarkable. NERVOUSNESS, all BLOOD DISEASES, RHEUMATISM, DISEASES PECULIAR TO WOMEN, CATARRH, DEAFNESS, CHRONIC CONSTIPATION . . . APPENDICITIS . . . PILES, STOMACH TROUBLES, PARTIAL PARALYSIS, etc., give way as if by magic under his skillful method of treatment . . . Understand please, that Dr. Erling DOES NOT ACCEPT A CASE FOR TREATMENT unless he can PROMISE A SPEEDY AND POSITIVELY PERMANENT CURE."

THE JOURNAL also has in its files advertisements (vintage of 1915), from some Wisconsin country newspapers, which notify the afflicted that "Drs. Erling and Karass, the expert German Specialists" could be seen in their offices in the "Schlegel Hotel," the "Schlitz Hotel," etc., as the case might be. Whether one of these "German Specialists" was Dr. Arnold E. Erling, THE JOURNAL does not know. Official medical records fail to show, at least, that there is any other Erling in the state of Wisconsin.

W. W. FRITZ, M.D., Philadelphia.—Another of the "Censors." This presumably is W. Wallace Fritz, M.D., D.D.S., N.D., D.O., D.C., who was the "Dean" of the "American College of Neuropathy," and "Professor of Neuropathy" at the same institution. According to newspaper reports published when the "dean" of the American College of Neuropathy was called into court to testify regarding the "school," Fritz admitted that when he became dean of this "college," the "college" had three students and thirty "Faculty Members"! Fritz, it should be mentioned in passing, is a member of the Philadelphia County Medical Society and by virtue of this membership he is a Fellow of the American Medical Association! Recently Fritz's name appeared in connection with the formation of a new organization, founded, it appears, for the laudable purpose of fighting the "Medical Trust." Fritz, according to the newspaper reports, is treasurer of this new organization, which has adopted the inspiring title, "Constitutional Liberty League of America" and seems to be a later edition of the mushroom "National League for Medical Freedom." Quoting from the newspaper report:

> "Dr. W. Wallace Fritz, a member of the American Medical Association, created a profound impression when he said that all health laws were written by agents of, or members of, the American Medical Association, and that this organization was at once the most powerful and the most baneful of all the American Trusts. Dr. Fritz then went on to say: 'Most of the drugs administered are worthless. Most of the doctors who prescribe them are incompetent, but both the injurious drug and the ignorant prescriber are protected, in and out of court, by the American Medical Association, which trust is now raising a vast fund with which to drive all drugless healers out of the profession. Medicine is the camouflage used to conceal the most alert, the most rapacious and the least patriotic of all the trusts milking the American people. The tyranny of the Medical Trust is unbelievable. It is also un-American.'"

The Philadelphia *Sunday Transcript* of May 4, 1919, had a five column article under the name of W. Wallace Fritz. It is a most vituperative affair, and reeks with fire and brimstone. It is directed chiefly against the American Medical Association, and physicians are dubbed "Prescription Writing Drug Peddlers Who Prosper Through Monopolistic Laws Rather Than by the Practice of an Exact Science." In the course of this diatribe we read:

> "The members of the American Medical Association are manifesting an unwarranted interest in the dear people, who, in their assumption, need quinin and mercurial guardian; who under this class legislation confines us to this monopoly of the big and little pill, is trying by hook and crook to shut out the natural and rational methods of cure which are driving the drug monopoly from the face of the earth. Diagnosis and consultation consist in four or five medical doctors, whose faces denote death, sitting around a sick man and guessing what ails him. After that has been performed they guess at what will cure him, and that is generally a sure sign the undertaker will follow."

C. O. LINDER, M.D., Spokane, Wash.—This gentleman (another "Censor"), seems to be an osteopath, who some years ago was "Assistant Secretary" of the "Washington's Physicians' Association," founded apparently by rebels within the osteopathic ranks who denounced the Washington Osteopathic Association as a "professional trust!" Linder apparently claims graduation in 1905 from the "Thompsonian Medical College" of Allentown, Pa. The following item from the American Medical Directory regarding this school is of interest:

> *"Thompsonian Medical College*, Allentown. Organized in 1904. Fraudulent. No evidence to show classes were ever held."

A. H. FLOWER, M.D., Boston.—Still another "Censor." Flower, according to the notice that appears in Polk's Directory for 1917, claims graduation in 1888 from the "American Health College" of Cincinnati, and in 1894 from the "American Health University" of Chicago. Quoting again from

the American Medical Directory, here is what we find regarding the former "college":

> *"American Health College*, Cincinnati. Organized in 1874 and re-organized in 1876. Conducted by a Dr. Campbell who originated and copyrighted the so-called 'Vitapathic System.' Fraudulent. Extinct about 1888."

We have no record of an "American Health University" of Chicago, although there was an "Illinois Health University" of Chicago, one of the numerous diploma-mill swindles operated by Armstrong. It was declared fraudulent by the federal authorities and its charter was revoked in 1897. Flower, according to the notice in Polk's Directory, is:

Ex-President Maine Eclectic Society.
Ex-President New England Eclectic Medical Association.
Member National Eclectic Medical Association.
Member American Progressive Medical Society.
Member Massachusetts Eclectic Medical Society.

Z. L. Baldwin, M.D., Kalamazoo, Mich.—Possibly the data just given concerning some of those whose names appeared on the organization's stationery are more than sufficient for the average physician to get a perspective of the Allied Medical Associations of America. Still, it is worth mentioning that in a letter recently sent out by Ignatz Mayer, extending an invitation to the annual convention of the Allied Medical Associations of America, Mayer took the opportunity of incorporating in his letter a letter which one of the members of the "association" had been sending out, urging individuals to join. The member in question was Dr. Z. L. Baldwin of Kalamazoo, Mich. Dr. Baldwin, as some of our readers may remember, is the gentleman who, a few years ago, was exploiting an "Intravenous Treatment" for the cure of tuberculosis. According to the claims made at that time:

> ". . . for the first time in the history of medicine, we have a successful treatment for tuberculosis.
> ". . . we are able to kill the germs of the disease in the body, thoroughly ridding it of all tubercular infection, destroying the germ and its poisons likewise."

This was a few years ago. Whether Dr. Baldwin is still specializing in consumption we do not know; apparently not, as we notice that at the first meeting of the Allied Medical Associations, Baldwin's name was on the program for the "Cure of Goiter by Adjustment of Lenses."

George Starr White, M.D., F.S.Sc., Lond., Los Angeles, Calif.—A letter received by a physician a few days before the recent convention of the Allied Medical Associations, held out as an inducement to be present the fact that "Geo. S. White will show you how to diagnose disease by means of dif. colored lights and the reaction of the body to the magnetic meridian." Dr. George Starr White was the "Second Vice-President" of the Allied Medical Associations in 1918. White, according to our records, was graduated in 1908 when he was forty-two years old, by the New York Homeopathic Medical College and Hospital. He was licensed in New York in 1908, in California, Connecticut and Nevada in 1913, and in Michigan in 1916. He seems to have been one of the proponents of "spondylotherapy," "zonetherapy," etc., and in 1915 it was announced that he would give one week courses in "Spondylotherapy" in Chicago, Kansas City and Denver, respectively. In his advertisement he emphasized that he was a Fellow of the American Medical Association, which, while true at the time, is no longer true, as on Feb. 4, 1916, he was expelled from membership in the Los Angeles County Medical Association. In May, 1915, White was arrested in Chicago and fined $100 and costs for practicing medicine without a license. Dr. White's specialty seems to be what is ponderously known as "Bio-Dynamo-Chromatic Diagnosis." This has been described by one of its enthusiastic adherents as "Diagnosis by Sympathetic Vagal-Reflex." To obtain the "Sympathetic Vagal-Reflex" it seems the patient must face east or west and have his bare abdomen percusssed until a dull area is located. The patient is then faced north or south and again percussed. Then, it seems, different colored lights are thrown on the patient, the location of the areas of dulness being determined meanwhile. A combination of ruby and blue light "will cause a reflex in cases of gonorrhea," a "green light will cause a reflex in cases of liver or gallbladder trouble," while the color for carcinoma is orange red! During the height of the influenza epidemic last winter, White seems to have put on the market "Valens Essential Oil Tablets" which were for "Gripping the Flu out of Influenza," and were also said greatly to benefit or cure incipient tuberculosis, hay fever, asthma, and "catar." The letters "F.S.Sc., Lond." after Dr. White's name look well, sound well, and have an air of erudition and mystery that is well worth what they cost. They mean "Fellow of the Incorporated Society of Science, Letters and Arts of London, Ltd." The "Fellowship" costs one guinea. Not a few "patent medicine" exploiters in the United States carry these mystic letters after their names. The society in question was a seriocomic concern that was exposed by London *Truth* some years ago and was also dealt with in The Journal of May 29, 1909, in connection with the "Aicsol Consumption Cure" exposé.

So much for the Allied Medical Associations of America. At their recent meeting in New York City they got much newspaper publicity because of their action on the prohibition question. According to the newspaper reports, the organization adopted a resolution declaring that "properly brewed lager beer is absolutely essential in the treatment of certain cases." They were further reported as endorsing the manufacture of light wines and of beer containing not to exceed 2¾ per cent. alcohol. As a piece of publicity work this resolution was all that its sponsors could expect. The Journal office was flooded with telegrams and letters from physicians, temperance workers, congressmen, church organizations, and others, asking, in effect, What *is* the Allied Medical Associations of America? This is our apology for giving the amount of space necessary to a proper understanding of this organization. Today the rocket of the Allied Medical Associations of America is blazing a more or less erratic course across the sky of publicity. The stick will be down anon! Any resolution or expression of opinion by this organization, or others of its type, when dealing with the broader problems of public health, is wholly without scientific significance, whether such resolutions are good, bad or indifferent.

Correspondence

THE NYSTAGMUS TEST AND PRACTICE

To the Editor:—My attention has been called to an article by Fisher and Babcock on "The Reliability of the Nystagmus Test" (The Journal, March 15, 1919, p. 779) in which very definite misinformation is included. Since statements therein made seem to be borne out by the "official" account of the psychologic work published in the Manual of the Medical Research Laboratory, it is necessary to refer to that also in correcting the errors disseminated.

The account of the psychologic department included in the Manual was written by me, but was so "edited" after leaving my hands that misrepresentations may easily be based on it. The "editing" included not only the addition of an "editorial insert," and footnotes not labeled as inserts, but also the omission of important details concerning the experiments on nystagmus: and these omissions make possible inimical criticisms which would be contradicted by the omitted material. Since the Manual as separately printed contains a preface by Colonel Wilmer (this preface omitted from the Manual as printed in the larger book entitled Air Service Medical), it is only fair to state that the "editing" was not done by him, nor with his knowledge, but apparently after he had embarked for France. To those who know Colonel Wilmer this explanation is of course superfluous.

The work on nystagmus done by the Psychological Section of the Medical Research Laboratory was planned by me and authorized by the Medical Research Board and by the officer

in charge of the Medical Research Laboratory. For suggestions on the work reported in the Manual I am indebted to Mr. Arboz, a New York dancing teacher of much experience. The work was brilliantly carried out by Captain Bentley, professor of psychology in the University of Illinois, in conjunction with Captain (later Major) Wales, an otologist of enviable reputation. Since Professor Bentley had years of experience in psychophysic observations, and Dr. Wales had served for a considerable time on examining units, administering the official nystagmus test, the omission of the fact that they conducted the experiments, with the substitution of the statement that "these experiments were conducted by assistants in the laboratory" (Air Service Medical, p. 320), is significant in connection with the statement of Fisher and Babcock that "these experiments were conducted by observers not experienced in this type of examination" (THE JOURNAL, pp. 781-782).

Since the experiments were based on the "official" test as given under the examining boards, and not on tests which might have been substituted for this, the routine actually adopted by the physical examining units was followed (Air Service Medical, pp. 63, 64 and 75, 76, also plate facing p. 76) in observing nystagmus. This method does not involve *convex lenses* or the douching of subjects distinctly "normal" on the rotation test. The only additions were (1) an improved method of controlling the *rate* of rotation by using a metronome instead of a wrist watch, and (2) an improved method of recording the nystagmus duration, avoiding the common errors in stop-watch measurements. The importance of the first improvement was shown by our timing supposed "experts" in turning the chair: their times for ten rotations, officially twenty seconds, varying from as low as thirteen to as high as twenty-seven seconds, in tests from which published inferences were made.

The statement of Fisher and Babcock that "no medical examination had been made to determine whether or not the subjects of these experiments were normal" agrees with the footnote editorially added to the Manual that "of the six individuals used by the psychologic [sic] department for these experiments not one was examined physically beforehand; two of these six were discovered subsequently to be pathologic, the other four had meantime been lost sight of. This failure to establish positively the normality of the individual subjects before proceeding with the series of tests is most unfortunate as it makes it impossible to draw any scientific conclusions from the data obtained" (Air Service Medical, p. 322).

Since the subjects passed successfully the official nystagmus test, administered by Dr. Wales, with nystagmus close to the otologically optimal 26 seconds, the assumption that they were "pathologic" is a reflection on the official test as serious as any we might have made. Furthermore, aside from the question as to what might be the respects in which the two subjects were "subsequently" found to be "pathologic," in addition to the shortened nystagmus duration; it should be said that of the four who were "lost sight of," three at least were for months thereafter in the service in the Mineola laboratory or at branch laboratories at which there were competent medical men who could have made physical examinations at any time the otologists of the Air Service Medical might have requested it.

Even as edited in the official report, the results of the experiments are perfectly plain. Men who had passed the official nystagmus test with unexceptionable records *before* the practice series were unable to pass the test *after* the practice series, because of shortened nystagmus duration. Three interpretations are possible: (1) Pathologic men can easily pass the test. (2) Normal men may be turned down by the test. (3) Continued practice in rotation makes men less susceptible to the harmful effects of rotation. The Air Medical otologists seem, curiously enough, to have adopted the first interpretation. The third interpretation is, however, borne out by subsequent work, and by data now available from the flying fields, and from the study of dancers.

The Air Medical Service, I am informed, has been reorganized under the control of a new group of men. It is to be hoped that they will openly correct the errors that have vitiated past publications and thus entitle future publications to credence, without waiting for the full freedom of presentation which will come at the termination of the war.

KNIGHT DUNLAP,
Professor of Experimental Psychology,
Johns Hopkins University.

"COMFORT AND COLD"

To the Editor:—The discussion of outdoor treatment in THE JOURNAL (June 21, 1919, p. 1859) seems to be confined to adapting the treatment to the comfort of the patient. My experience has been that the adaptation of the patient to the treatment is the essential thing, and unless this can be done, piling on more clothes is simply a limitation or defeat of the benefits of outdoor life. The mere breathing of fresh air constitutes only an infinitesimal part of the treatment. The patient needs the ventilation and stimulation of the air—of the cold air—and the adaptation of his body to the influence of cold air can never be accomplished by clothes. The latter may protect him, but it defeats the very purpose of outdoor life. It was not particularly the spruce boughs or the logs or even the blanket, although a certain amount of clothes is necessary, that kept the Canadian guide warm and ruddy but the reaction of his capillaries, from years of adaptation to the outdoors. I have slept snug and warm under a tarpaulin at minus 30 degrees and have had patients comfortable all winter in tents without heat when the thermometer went below minus 30, because accustomed to the cold. By moving patients into tents in autumn, or in emergencies by gradually graded cold baths, friction and brief exposure, a patient soon becomes accustomed to the change and resists extreme cold. People who live outdoors require less clothing than those who are housed. The problem of the invalid is to be able to get rid of the enervating influence of clothes; and instead of adapting the outdoors to the patient we should follow the axiom of adaptation to environment as the means toward survival.

J. HECTOR MACKAY, M.D., Houston, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PARTOLA

To the Editor:—Will you kindly inform me what Partola is? It was brought to my attention by patients who buy it as a blood purifier, and when taken daily for some time, deleterious effects develop. One such patient is now in a "run down" condition with discoloration of the skin and a craving for the drug. Another patient took three tablets before going to bed, developed cramps and aborted the next day in her third month of pregnancy. MYER M. MARBEL, M.D., Chicago.

ANSWER.—"Partola" was analyzed by the chemists of the Connecticut Agricultural Experiment Station and their report for 1915, Part 5, says of this product: "The tablets contain 2.64 grains phenolphthalein per tablet, 10.39 grains sugars and 1.86 grains. starch, talc, color and oil of peppermint."

Education Versus Force.—In the enforcement of health regulations or sanitary laws, two methods present themselves: one that of education and persuasion; the other that of force, or the resort to prosecution under the terms of the law. The choice of which of the two will be most effective, and at the same time accomplish the most permanent results will, as a rule, depend on whether or not special or personal interests are involved. If there are no special financial interests involved and only the welfare of the community or public as a whole is to be taken into consideration, then the educational method is at once the most effective and most permanent in results.—Kansas State Board of Health.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 8. Chairman, Dr. S. W. Welch, State Capitol, Montgomery.

Connecticut: New Haven, July 8-9. Sec., Regular Bd., Dr. Charles A. Tuttle, 196 York St., New Haven; Sec., Homeopathic Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

District of Columbia: Washington, July 8-10. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

Massachusetts: Boston, July 8-10. Sec., Dr. Walter P. Bowers, State House, Boston.

New Mexico: Santa Fe, July 14. Sec., Dr. R. E. McBride, Las Cruces.

Oklahoma: Oklahoma City, July 8-9. Sec., Dr. J. J. Williams, Weatherford.

Pennsylvania: Philadelphia and Pittsburgh, July 8-10. Sec., Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, July 10-11. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Deadwood, July 8. Sec., Dr. P. B. Jenkins, Wauhay.

Utah: Salt Lake City, July 7-8. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

West Virginia: Huntington, July 8-10. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Massachusetts February Examination

Dr. Walter P. Bowers, Secretary of Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Feb. 18-19, 1919. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 70 candidates examined, 69 passed, including one osteopath, and one failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Boston University (1919) 76.2, 76.4, 78.3, 79.2, 79.5, 81.7.		
Harvard University (1917) 81.6; (1918) 82.3; (1919) 75, 75, 76.8, 77.2, 77.7, 77.7, 78, 78.2, 78.2, 78.2, 78.9, 79, 79, 79.2, 79.2, 79.4, 79.5, 79.7, 79.9, 80, 80, 80.5, 80.6, 80.7, 81, 81, 81.3, 81.6, 82, 82, 82, 82.2, 82.2, 82.3, 82.3, 82.4, 82.5, 82.5, 82.5, 82.6, 82.7, 82.7, 82.8, 82.8, 83, 83, 83, 83, 83.2, 83.5, 83.7, 84, 84.2, 84.2, 85.4, 85.5, 85.5, 86.5.		
New York Homeo. Med. Coll. and Hospital	(1896)	75
University of Vermont	(1910)	75.8
FAILED		
Boston University	(1919)	69.3

Maine March Examination

Dr. Frank W. Searle, Secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, March 11-12, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Boston University School of Medicine	(1918)	83
Harvard University	(1918)	85
Tufts College Medical School	(1898), 79; (1919)	86

College	Licensed through reciprocity	Year Grad.	Reciprocity with
Medical School of Maine		(1892)	New Hamp.
University of Minnesota		(1899)	Minnesota

Rice in the Chinese Dietary.—Consul Julean Arnold at Pekin says (*Commerce Reports*, Jan. 13, 1919) there is a mistaken idea abroad that every Chinese man, woman and child in China eats rice every day. As a matter of fact, there are millions of Chinese living in Shensi, Shansi, and Northwestern China, where rice is not grown, who never have seen or tasted rice. There are millions in the rice producing sections who cannot afford to eat rice regularly. With these qualifications it may perhaps be said that rice is the staple article of diet of the Chinese people, or, more correctly, of the people of Central and South China; though, strictly speaking, there is reason to believe that the sweet potato occupies an even more general place in the dietary of the people throughout all sections of China than does rice.

Book Notices

Advanced Suggestion (Neuroinduction). By Haydn Brown, L.R.C.P. Cloth. Price, $2.50. Pp. 342. New York: William Wood & Co., 1919.

In the preface the author naively states, concerning his book, "Nor can it be considered perfect." On page 11 he says: "Strange to say, . . . I never went through an elementary schooling." The reader will at once concede that both statements are unimpeachable. But it should be added that by the second bit of information apparently he means that he went through no developmental period of training in psychotherapeutics. No budding process for him. Lo! the perfect bloom instantly was there.

As nearly as can be gathered from widely scattered and obscure statements in the book, what the author means by "advanced suggestion" is a combination of persuasion, simple suggestion, and the laying on of hands. He calls it neuroinduction—whatever that may mean. Mayhap the following will clarify it for the reader:

"Neuroinduction involves limitation of both the physical and the mental energy of the patient down to a plain static receptivity on the part of the patient, and to an easy capability of comprehension of the remarks or sensations that are conveyed by the physician. It should, therefore, elicit no reply if consistently carried out, for this would entail effort at a time when absolute mental and physical relaxation was [sic] of prime necessity."

Or this:

"Suggestion should be considered as applicable, not only to brain conception, but to body perception. Under the methods which I employ a patient is not only instructed by words spoken, but his general system is at the same time inducted by manipulations which are designed to impress, both wholly and locally."

The principal interest of the book lies in the opportunity it gives the reader to follow the mental wanderings of the author; for the mind of a practicing, licensed physician who makes a diagnosis of "general nervous chaos," cures prolapse of the rectum in a child of 2½ years by three sittings of neuroinduction, and advises the same esoteric procedure in hemorrhoids, varicose veins, valvular heart disease and warts, cannot be devoid of interest for even the casual thinker. The sole value of the book lies in its repetition of the lesson that medical men are so slow to learn. Times without number it has been shown that the ignorant enthusiast, the narrow minded faddist, the confident charlatan and the purblind mystic may get results where apparently a physician has failed. The latter's attention was riveted on organs and diseases to the exclusion of the man himself.

Surgical Aspects of Typhoid and Paratyphoid Fevers. Founded on the Hunterian Lecture for 1917, Amplified and Revised. By A. E. Webb-Johnson, D.S.O., M.B., Ch.B., Temporary Colonel, Army Medical Service, British Expeditionary Force, France. With Foreword by Lieut-General T. H. Goodwin, C.B., C.M.G., D.S.O., Director-General, Army Medical Service. Price, $4.50. Pp. 190, with 26 illustrations. New York: Oxford University Press, 1919.

This book is a well planned review of the surgical complications that developed under war conditions in 2,500 cases of typhoid and paratyphoid A and B. For many readers the chief point of interest of the book will lie in the emphasis which the author puts on the fact that there were so few surgical complications in the vaccinated as compared with the unvaccinated. In comparison with typhoid, paratyphoid A and B are found to be relatively mild diseases, although at times they, too, exhibit all of the complications of typhoid. Paratyphoid A is also a much milder disease than paratyphoid B.

A brief historical sketch of typhoid and paratyphoid is given, from which it appears that the evidence of the disease in war dates from 1643. Since its first appearance it has continued to be a menace to the armies of all countries. In 1896 the paratyphoid bacillus was first isolated and designated as distinct from the typhoid bacillus. It was not, however, classified until 1912.

In the large British isolation hospital in France, where these 2,500 cases were recorded, a careful segregation of all cases into typhoid and paratyphoid A and B was made and the bacteriologic findings were kept separate, which thus permitted an interesting and instructive comparison of these three so closely allied diseases. The value of vaccination was demonstrated by the lower incidence of typhoid and the lower mortality among the vaccinated. The bacteria found in the complications depend on the time of onset. If complications occur late in the disease or in convalescence, the specific organisms are usually found in pure culture; but in early complications, pyogenic organisms are usually found. Perforation is of primary surgical importance, as an early diagnosis must be made. Paratyphoid was found to involve the large intestine more than typhoid. The author recommends a midline incision in order thoroughly to explore the abdomen. He uses local anesthesia or a combination of it with gas and oxygen or small doses of ether inhalation. Other abdominal conditions, such as abscess of the liver or spleen, or primary peritonitis, occasionally occur. When the biliary passages become involved, the author advises conservative measures if possible. The genito-urinary system was most often involved in the paratyphoid B infection. Tracheotomy was at times necessary for laryngitis. Chest complications were also most common in paratyphoid B infection. The author found that in cases with symptoms of spondylitis there frequently were organic lesions. Ear complications were common, and brain abscesses are said to develop at times without ear involvement.

The carrier problem is unsettled and the author thinks that, while the gallbladder may be the source of the infection, it may be the spleen, the bone marrow or other foci.

Social Medicine, Medical Economics and Miscellany

The New Science of Industrial Physiology

By the term "Industrial Physiology" Frederick S. Lee (*Public Health Reports* **34**:723 [April 11] 1919), professor of physiology in Columbia University, means the sum of knowledge pertaining to the working of the human mechanism in industrial activity. It thus includes psychologic phenomena as well as those more technically recognized as physiologic.

It has come to be recognized that industrial success is dependent in large measure on the efficiency of the labor element. In the body of the worker, with its combination of living organs and tissues, undergoing chemical reactions and transforming energy under the direction of a nervous system, we have a very intricate mechanism, on the proper working of which depend in large degree industrial efficiency and, through it, industrial success. The war, with its extraordinary call on human energies in the field of industry, has emphasized as never before the hygienic, or more properly speaking, the physiologic, aspects of industrial activity, and during the past four years the beginnings of a new science, an industrial physiology, have appeared and attracted the attention of scientific men and the more sagacious of industrial leaders. Some of the results of investigations already made are:

Certain physiologic and psychologic tests have been employed with workers, and it appears practicable to employ some of these tests in selecting workers and assigning them to their jobs.

The output of the successive hours of the working day in different types of operations has been measured, and the daily curves of the output have been plotted. These vary with the kind of operation, but are alike in showing a reduced efficiency, indicating a growing fatigue, as the day proceeds.

Reduction in the length of the working day is characterized by an increase in the output of the successive hours and usually by a total increase in that of the day. The optimum duration of work probably varies with the character of the work itself.

The introduction of resting periods in the working spell is accompanied, especially where the working day is long, by a total increase in the day's production. A five-hour working spell, unbroken by resting periods, is probably always too long.

Overtime following a day of labor is inadvisable, as is also Sunday work following a week's labor. These tend to impair the working power of the worker.

A hot day tends to impair strength and reduce output. Every effort should be made to keep the body of the worker cool.

Night work is, in general, less efficient than day work. Its total output is less, and this, with a long working night, falls off enormously in the early morning hours. Alternation of periods of night work with periods of day work is more profitable than continuous night work.

Women are capable of performing a much greater variety of industrial operations than has heretofore been recognized. They should not be employed for night work. Statistics show that they are absent from their work more frequently than men. The problem of women as compared with men in industry is not that of their greater or less general efficiency, but rather a problem of what types of work each sex is best fitted for.

Accidents to workers are a grave source of inefficiency. They are caused by fatigue, inexperience, speed of working, insufficient lighting, high temperature and other factors. Many industrial accidents are preventable, and adequate provisions for first-aid measures tend to diminish the seriousness of accidents.

Food and efficiency are directly connected with one another, and suitable and adequate food can probably be best provided through the establishment of industrial canteens.

A high labor turnover is incompatible with the highest degree of efficiency. It is expensive, in that it imposes on the employer the necessity of training new workers, and it is a serious factor in the causation of accidents.

Physiologic analysis of certain operations have been made, by means of the cinematograph and other methods, and it has been found possible to eliminate unnecessary motions and to train workers so as to secure a more regular rhythm, such measures increasing efficiency.

The self-limitation of work on the part of workers has been studied and found to be very common. Every legitimate effort should be employed by foremen and managers to eliminate this and to induce workers to work up to their physiologic capacity. Driving workers beyond their physiologic capacity defeats its own ends.

These and similar topics have been the subject of investigation, in England by the Health of Munition Workers Committee, and later by the Industrial Fatigue Research Board, which has been appointed jointly by the Department of Scientific and Industrial Research and the Medical Research Committee. The chairman of this board is Professor Sherrington, F.R.S., Oxford, and its membership comprises many well-known men.

In America during the past eighteen months the Public Health Service, with the cooperation of the committees on fatigue in industrial pursuits and on industrial fatigue, of the National Research Council and the Council of National Defense, respectively, has been conducting a fruitful investigation of a variety of topics within the scope of industrial physiology, and its report will soon be ready for publication.

Work in this line is also engaging the attention of the universities in the three countries that are of leading industrial importance, notably in the case of Prof. Stanley Kent, the newly appointed director of the Department of Industrial Administration in the Municipal Technical College of Victoria University, Manchester. In our own country the work has been undertaken by Harvard University, and similar activities are expected from the School of Hygiene and Public Health recently established in Johns Hopkins University.

"With the ending of the war," says Dr. Lee, "the problems of industry press for solution more earnestly than ever, and one of the most timely of these problems concerns the physiologic aspects of the work of the human machine. On us in America, where industry is destined to lead the world, there is imposed a grave duty—that of directing investigation along such lines that empiricism and tradition, those two obstacles to progress which have long been potent in industrial evolution, shall be cast out and industry shall be placed permanently on a scientific basis."

Mortality After Operation for Gastric and Duodenal Ulcers

At the request of the Association of Life Insurance Medical Directors, Dr. Angin B. Hobbs made an investigation as to the mortality following operations for gastric and duodenal ulcers. Patients, operated on at the Mayo Clinic from Jan. 1, 1916, to December, 1915, were made the subjects of this investigation. When a record of the subsequent outcome of the case was not obtainable from the clinic, the insurance companies came to the rescue, so that in 96 per cent. of the cases the history after operation was known. Of

545 persons operated on for gastric ulcer, twenty-four died as the result of the operation, an operative mortality of 4.5 per cent. Among the 1,684 operations for duodenal ulcer, there were thirty-three operative mortalities, or 2 per cent. The operative death rate from gastric ulcer, including deaths in the hospital soon after operation, was therefore fully twice that from duodenal ulcer. The 521 persons operated on for gastric ulcer were under observation for an average of 3.6 years, and during that time, eighty-eight, or 17 per cent., died. The 1,651 duodenal ulcer patients were under observation on an average of 3.4 years, and during that time, eighty-five, or about 5 per cent., died. Ninety-one persons who had both gastric and duodenal ulcer were under observation on an average of 3.8 years. Nine of this number, or 10 per cent., died. Therefore, the mortality among persons operated on for gastric ulcers is three times as high as among those operated on for duodenal ulcer during the three years following the operation. The mortality among the former decreases relatively after operation. This investigation is said to be the first of the kind made.

Medicolegal

Release to Company No Defense to Surgeon Forgetting Identity of Patient

(Purchase v. Seelye (Mass.), 121 N. E. R. 413)

The Supreme Judicial Court of Massachusetts, in this action brought to recover for an unauthorized surgical operation performed by the defendant on the plaintiff, wherein there was a verdict for the defendant, sustains exceptions to the admission in evidence of a release to a railroad company, and to a ruling that the release was a bar to this action. The court says that the plaintiff, while in the employ of the railroad company, suffered a rupture in his right groin. He consulted the defendant, who operated on him the next day. The day following he discovered that the operation had been performed on his left side, and spoke about it to the defendant, who, he testified, said that he mistook him for another patient that had a hernia on the left side. Afterward an operation was performed by the defendant on the plaintiff's right side. Later the plaintiff made a settlement of his claim against the railroad company, and executed and delivered to it a release of all claims and demands "arising or which may arise out of said injury." This action against the surgeon was brought after that settlement, and an important question was whether it was barred by the release.

If the plaintiff's employer, in an action brought against it to recover for original injury, would have been liable for the negligence of the defendant in improperly treating the plaintiff, then the release included such damages, and was a bar to the present action for the reason that in such a case the plaintiff had a claim against both the railroad company and the surgeon for the same cause of action, and a release of one of the alleged wrongdoers would operate as a release of both. It is well settled in Massachusetts, and in many other jurisdictions, that in an action for personal injuries arising out of the alleged negligence of the defendant, the plaintiff is entitled to recover for the injuries resulting from the defendant's negligence although such injuries are aggravated by the negligence of an attending physician if, in his selection and employment, the plaintiff was in the exercise of reasonable care. The question was whether the act of the defendant in operating by mistake on the plaintiff's left side was a natural and probable result of the negligence of the railroad company. The court is of the opinion that the general rule as stated above was not applicable to the case at bar. There was sufficient evidence to show that the defendant made a mistake in the identity of the plaintiff at the time the operation was performed: that he then believed he was operating on another patient who had a hernia on his left side. The railroad company could not be held liable because of his mistaken belief that he was operating on some person other than the plaintiff: such a mistake was not an act of negligence which could be found to flow legitimately as a natural consequence of the original injury. The fact that the mistake might possibly occur was not enough to charge the railroad company with liability; the unskilful or improper treatment must have been legally and constructively anticipated by the original wrongdoer as a rational and probable result of the first injury. The court is of the opinion that the act of the defendant in operating on the wrong side was a wholly wrongful, independent and intervening cause for which the original wrongdoer was in no way responsible.

If it be assumed that the release was valid and a bar to any claim which the plaintiff had against the railroad company, still a majority of the court is of the opinion, for reasons stated, that it was not a defense to the present action, and was not admissible in evidence. It was unnecessary to decide whether the railroad company would have been liable for the aggravation of the plaintiff's injury by the mistake of the defendant in operating on the wrong side, had there been no mistake with reference to the identity of the patient.

Right to Select Physician or Hospital Under Workmen's Compensation Act

(Leadbettor et al. v. Industrial Accident Commission (Calif.), 177 Pac. R. 449; Cella v. Industrial Accident Commission et al. (Calif.), 177 Pac. R. 490)

The Supreme Court of California says, in the Leadbettor case, that the workmen's compensation act of that state (Section 15 a) imposes on the employer the duty to provide medical, surgical and hospital treatment, and, "in case of his neglect or refusal seasonably to do so," makes him liable for the reasonable expense incurred by the employee in providing the treatment. The intent of the act obviously is that the employer shall, in the first instance, have the right to designate and select the physicians who are to give treatment to the employee. The latter is authorized to make his own selection at the expense of the employer only when the employer has neglected or refused to provide the necessary service.

The District Court of Appeal of California, First District, Division 1, in affirming, in the Cella case, an order of the commission refusing to make an award in his behalf covering hospital charges, says that he was injured while in the employ of a company, and was told by the company's physician to go to the St. Francis Hospital. He did not do so, but went to St. Joseph's Hospital. He claimed that he did this through ignorance, being an Italian who could neither read, write nor speak English. However, the fact was clearly established that he was directed to go to the St. Francis Hospital and the address was given in writing. These facts did not show any neglect or refusal on the part of the company to furnish him hospital service. Yet it is clear that the commission could not make an award to him for such services except it be first shown that the company had neglected or refused to furnish such service. The commission did not exceed its jurisdiction in refusing him an award.

Responsibility for Erroneous Diagnosis

(McCollum v. Barr (Calif.), 176 Pac. R. 463)

The District Court of Appeals of California, Third District, affirms a judgment for $1,000 damages in favor of the plaintiff for alleged unskilful treatment of his right forearm, which was fractured in cranking an automobile. The court says that the defendant not only diagnosed the case as one of dislocation and treated it as such for seven weeks, but, in his verified answer to the complaint, he denied that the plaintiff's forearm suffered a fracture, although the testimony of two other physicians left no doubt that both bones of the forearm were broken. It was very clear that the defendant made a faulty and erroneous diagnosis of the plaintiff's injury and adhered to it during the period of his treatment. Did the evidence sufficiently support the implied finding of the jury that this erroneous diagnosis was illy considered and carelessly or negligently made and not warranted by the facts as they presented themselves to the defendant? In solving the question the court must give to

the evidence such interpretation as the jury gave it, and deduce from it such inferences as the jury deduced, if such interpretation and deduction were such as reasonable men might make in the discharge of their duties as jurymen.

The expert witnesses seemed to agree that in case of doubt the roentgen ray, if accessible, should be used. There was testimony of the experts that where discoloration existed to the extent shown in this case, though not conclusive, it was indicative of fracture. The defendant testified that he had no doubt of the correctness of his diagnosis. But was he justified, in view of the facts, in closing his mind against any doubt, and neglecting an available and accepted means of testing the correctness of his judgment? The defendant's ability and skill as a physician and surgeon seemed not to be questioned. The point urged was that in this particular instance he did not exercise the care and skill of which he was capable, and did not "use ordinary care, diligence, and skill, according to the circumstances of the case," as the jury were instructed was his duty. It might be conceded that the defendant's expert witnesses were correct in their opinion that ordinary skill did not require of the defendant that he should have used the roentgen ray in making his diagnosis. But there still remained the question whether the defendant did in fact exercise ordinary care and skill in making his diagnosis, and the still further question whether, had he exercised ordinary care and skill in his treatment, he would not have discovered the error in his diagnosis.

It may be doubted that the degree of skill and care of a physician in diagnosing and treating disease is the same as that of a surgeon in all cases of surgery. A broken or dislocated member of the body, usually discernible to the eye or the touch of the surgeon, presents an entirely different problem from internal disorders whose manifestations are obscure and often misleading. However this may be, the question is always open to inquiry whether or not the physician or surgeon in a given case did in fact exercise ordinary skill and care.

Loss of One Member Before Employment and One After

(Wabash Railway Company v. Industrial Commission et al. (Ill.), 121 N. E. R. 569)

The Supreme Court of Illinois affirms a judgment for compensation under the workmen's compensation act for a total and permanent disability in a case in which a man whose left arm had been amputated near the shoulder was employed by the railway company as a night watchman and while so employed fell over a pile of scrap iron and injured his left knee, as a result of which injury tuberculosis of the bone set in and his left leg was amputated about 6 inches below the hip joint. The company contended that the loss of one leg does not constitute total permanent disability; but the man contended that the loss of his left leg, combined with the previous loss of his left arm, constituted permanent disability. The court says that this precise question has not arisen before in Illinois. It has arisen in some other jurisdictions under compensation acts similar to that of Illinois. In Massachusetts and New York it has been held that under such circumstances the disability occasioned is total and permanent. This court is disposed to follow the reasoning of the Massachusetts court construing a statute quite similar to that of Illinois, and to hold that the latter applies when the loss of one of the members mentioned occurred previous to the employment, and the loss of the other occurred as the result of an injury arising out and in the course of the employment. This, in this court's opinion, is the fair intent and meaning of the act. When this man was employed by the railway company, he had lost his left arm, and his capacity for work was to that extent impaired. He was employed to do work which could be performed by a man having but one arm, and he was paid on that basis. By the loss of his leg such capacity as he had for work was entirely destroyed, and under the provisions of the statute he was entitled to compensation for total permanent disability. Nor does such construction work any hardship on the company, as the man was employed and paid as a man of limited capacity, and the compensation which the company is required to pay is based on the wages it was paying him as a man of limited capacity. The fact that he may have been predisposed to tuberculosis of the bones did not affect the result, as the evidence showed that the tuberculosis of the left knee developed as a result of the injury.

When Employer Is Not Liable for Medical Services

(Rodil v. Morris & Co. (Neb.), 170 N. W. R. 363)

The Supreme Court of Nebraska holds that, under Section 3661 of the Revised Statutes of Nebraska of 1913, as amended by the Laws of 1917, Chapter 85, Section 6, an employer, who offers to furnish without charge to an injured employee the reasonable services of a competent physician and medicines as and when needed, and within the value and for the time contemplated by the statute, cannot be held liable for such services by such employee, who has refused such offer by the employer and has obtained such services and medicines elsewhere. The court says that the plaintiff in this case sustained an accidental injury while in the employ of the defendant, and as a result of the accident a part of the second finger of his left hand was bruised and fractured, and afterward amputated at the joint. He recovered an award from the compensation commissioner on account of the injury, and for $129 expenses incurred for medical and surgical treatment by a physician other than the one regularly furnished by the defendant. The plaintiff argued that, because an operation became necessary, he was therefore at liberty to make his own selection of a physician, and that the defendant became liable under the statute for the reasonable expenses so incurred. But the court is of the opinion that, the employer having been made liable for the services contemplated by the statute, it would seem from the language used that it must have been the legislative intent that he should be permitted to furnish a physician of his own choice, and if his selection is such as would satisfy a reasonable man under like circumstances, the employee would not then be heard to complain. That is the general rule in manufacturing centers, where employers' liability acts with provisions similar to those of the Nebraska act were in effect before the latter was adopted. It seems to the court that the plaintiff's conduct was in effect and within the meaning of the statute an unjustifiable refusal to allow the defendant to furnish the reasonable services and medicines that the act contemplates, and that the defendant was not therefore liable for the medical expenses that he incurred. Wherefore a judgment of the district court, which disallowed the bill for $129 for medical services, is affirmed.

Bars Testimony as to What Roentgenograms Show

(Lang v. Marshalltown Light, Power & Railway Co. (Iowa), 170 N. W. R. 463)

The Supreme Court of Iowa holds that there was no error in a ruling in this personal injury case sustaining objection to questions such as one asking a physician to state whether or not a certain roentgenogram did, or did not, show a curvature of the spine, as appeared in the negative. The court says that the defendant cited a number of cases to the proposition that roentgen-ray negatives and photographs, properly verified, are admissible in evidence, and this proposition was not disputed by the plaintiff. Cases were also cited by the defendant, holding that it is proper for experts to interpret and explain roentgen-ray plates to the jury. Among these was the case of *State* v. *Matheson*, 142 Iowa, 414, 120 N. W. 1036. It was claimed, too, that some of the cases hold that a witness may testify as to what the photograph shows. But the court thinks that the questions asked in this case, and the rulling thereon, were within the ruling of *Elzig* v. *Bales*, 135 Iowa, 208, 112 N. W. 540, wherein it was said, in effect, that, as demonstrative evidence, roentgenograms serve to explain or illustrate and apply the testimony, and are aids to the jury in comprehending the questions in dispute. When taken for either purpose they are the best evidence of what appears on them. The rule exacting the best evidence applies to the testimony of experts, as well as to that of other witnesses, and it was error to permit a physician to testify to what appeared in a roentgenogram.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia and New York

June, 1919, **157**, No. 6

Pathologic Possibilities of Neglected Gallstone Disease. J. B. Deaver, Philadelphia.—p. 733.
Speculations Regarding Nature of Cancer. A. L. Benedict, Buffalo.—p. 742.
*Heart Muscle Equations. H. W. Dana, Boston.—p. 750.
Advancement in Treatment of Wounds and Infections Resulting from War. J. H. Gibbon, Philadelphia.—p. 764.
*Clinical Manifestations of Influenza in Children. L. E. LaFetra, New York.—p. 770.
Primary Carcinoma of Vermiform Appendix: Review of Literature, with Report of Two New Cases. E. E. H. Boyer, Columbus, Ohio.—p. 775.
*Case of Human Anthrax. J. C. Regan and C. Regan, New York.—p. 782.
Method of Obtaining Cerebrospinal Fluid By Puncture of Cisterna Magna (Cistern Puncture). P. Wegeforth et al., Baltimore.—p. 789.
*Acute Hematogenous Streptococcic Peritonitis. M. A. Rabinowitz, Brooklyn.—p. 797.
Pathology of (Mustard?) Gas Inhalation. G. W. Covey, Lincoln, Nebr. and M. Barron, St. Paul.—p. 808.
Climacteric Hypertension: Study of High Blood Pressure During and Following Menopause. A. H. Hopkins, Philadelphia.—p. 826.

Heart Muscle Equations.—No single procedure or formula gives universally applicable information regarding the integrity of the heart muscle in a given case. In the order of their value as indications of a damaged myocardium, Dana places the following criteria: The general appearance of the subject, with special reference to his color, to the occurrence of actual dyspnea, or distress, or cough or exhaustion resulting from exercise; the presence of a true gallop rhythm at rest or following exercise; the production, as the result of exercise, of a relative mitral insufficiency, as evidenced by a murmur; the presence, in the absence of valvular disease, of signs of decompensation, such as edema of the lungs or of the extremities, whether at rest or after exercise; weakening of the first sound at the apex, resulting from the effort test; increased strength of the first sound over the right ventricle as compared with the first sound at the apex, occuring after exertion; weakened first sound at the apex, at rest, in the absence of emphysema; the production, following the effort test, of irregular heart action or the increase in irregularity, already present, brought on by exertion; loss or weakening of the second sound at the apex, due to exercise; variations in the systolic, in the diastolic or in the pulse-pressures are believed to give relatively little information regarding the cardiac function.

Influenza in Children.—Only about 10 per cent. of the children whose cases were reviewed by La Fetra had pneumonia. About four-fifths of the cases with lung involvement took the form of bronchopneumonia. The most peculiar feature of bronchopneumonia cases was the occurrence in six instances of interstitial emphysema. Appearing first above or below the clavicles it extended to the thorax, the arm and the back, in two cases down as far as the nipple and in one instance down the trunk and as far as the middle of the thigh, the crepitations being felt throughout the entire area. Apparently the symptom occurs in only the severest cases, for five of the six patients died.

Case of Human Anthrax.—In the case cited by the Regans, the disease involved the neck. The anthrax bacillus was not only recovered locally from the lesion, but was also found in the patient's shaving brush. Anti-anthrax serum was employed exclusively in the treatment, given both by intramuscular injection and locally by injection into the tissues immediately surrounding the malignant pustule. The latter method of treatment proved exceedingly effective. Excision of the lesion proved entirely unnecessary after the local application of the serum.

Hematogenous Streptococcic Peritonitis.—Seven of Rabinowitz's eight cases occurred in females; their ages ranged from 10 months to 21 years. All occurred during the winter and spring months. This corresponds exactly to the seasonal incidence of the streptococcic throat epidemics. In but few instances was there a history of pain in the throat or tonsillitis. The history, as a rule, was that the patient had suddenly, while in the best of health, been taken sick with high fever, reaching 104 F., or over, severe generalized abdominal pain, repeated vomiting and marked prostration. These phenomena persisted until admission. When the peritonitis followed a distinct anginal attack a period of well-being, lasting three or four days, frequently intervened before the sudden development of the peritonitic symptoms. The temperature remained high without marked oscillations. The pulse was invariably very rapid and out of proportion to the temperature. It was at first of a bounding character. Herpes labialis was invariably absent in this series. Diarrhea occurred in but few of the cases. The leukocyte count was very high, ranging between 25,000 and 64,000, on the average of 40,000. The polymorphonuclear count varied from 85 to 97 per cent., on the average 92 per cent. The abdomen was tender and moderately rigid all over. There was no marked distention, and careful examination only infrequently revealed evidences of fluid in the flanks. The patient rapidly passed into the terminal phase of peritonitis, with the usual attendant phenomena of Hippocratic facies, livid, clammy extremities and running, thready pulse. Death occurred in from three to eight days of the onset of the peritonitic stage, and was the result of cardiac and vasomotor collapse, induced by a virulent toxemia.

American Journal of Public Health, Boston

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Preliminary Results of Nutritional Surveys in U. S. Army Camps. J. R. Murlin and C. W. Miller, Washington.—p. 401.
Review of Indirect Contact Transmission and Preliminary Report of Corroborative Laboratory Research. J. G. Cumming, Newport News.—p. 414.
Food Inspection and Food in Relation to Public Health. G. Koehler, Chicago.—p. 418.
Relative Value of Cultural and Inoculation Tests for Detection of B. Tetani. I. A. Bengtson and G. W. McCoy, Washington.—p. 427.
Hospital Food Needs. R. G. Hoskins, Washington.—p. 431.
Scoring of Health Activities in Cities of New York State. P. B. Brooks, Albany.—p. 436.
Why County Health Officers should be Appointed. P. H. Bryce, Canada.—p. 440.
School Hygiene a National Problem. J. A. Nydegger, Baltimore.—p. 442.

American Journal of Roentgenology, New York City

June, 1919, **6**, No. 6

Osteomyelitis. F. H. Baetjer, Baltimore.—p. 259.
Coexisting Multiple Lesions as Causes of Diagnostic Errors of Omission. A. W. Crane, Kalamazoo.—p. 264.
Roentgen Ray Work of Overseas Hospital. C. Eastmond, Brooklyn.—p. 269.
Familial Deforming Chondrodysplasia Multiple Exostoses. C. S. Gorsline, Battle Creek.—p. 271.
Hydatid Disease of Bone (Tibia). H. Harris, Sydney, Australia.—p. 277.
Pedunculated Malignant Growths of Stomach. G. W. Holmes, Boston.—p. 279.
Chest Roentgenology in Selective Service Examinations. W. W. Watkins, Phoenix, Ariz.—p. 283.
Prostatic Calculi from Roentgen Ray Diagnostic Standpoint. M. J. Hubeny, Chicago.—p. 286.
Protected Chair for Roentgenoscopy. H. Zimmerman, San Francisco.—p. 289.

Boston Medical and Surgical Journal

June 19, 1919, **180**, No. 25

Orthopedic Problems in War. J. E. Goldthwait, Boston.—p. 681.
Applied Anthropology. C. L. Lowman, San Francisco.—p. 693.

Bulletin of Johns Hopkins Hospital, Baltimore

June, 1919, **30**, No. 340

*Occurrence of Gastric Mucosa in Case of Meckel's Diverticulum Producing Intestinal Obstruction. E. Goetsch, Baltimore.—p. 143.
Graphic Application of Principle of Equilateral Triangle for Determining Direction of Electrical Axis of Heart in Human Electrocardiogram. E. P. Carter, C. P. Richter and C. H. Greene, Baltimore.—p. 162.

*Phagocytosis and Agglutination in Serum in Acute Lobar Pneumonia: Specificity of these Reactions and Regularity of their Occurrence. P. W. Clough, Baltimore.—p. 167.
Development of Cross Striations in Heart Muscle of Chick Embryo. M. R. Lewis.—p. 176.
Spina Bifida with Associated Disturbances in Human Embryo Seventeen Milimeter Long. S. T. W. Cull, Baltimore.—p. 181.
Manus Meditationis. C. Singer, Oxford.—p. 184.

Gastric Mucosa in Meckel's Diverticulum Producing Intestinal Obstruction.—In a case of partial obstruction caused by Meckel's diverticulum a striking variation was discovered at operation in the mucous membrane of the distal half of the diverticulum. This area of mucous membrane at the tip of Meckel's diverticulum was differentiated from the proximal mucosa by a sharp line of demarcation and by a difference in color, surface character and in thickness. On subsequent sectioning, this area of mucosa proved to be of the precise character of gastric (fundus) mucosa, containing the typical gastric glands (foveolae gastricae) composed of the two distinctive types of cells, the parietal and chief, each of which presented their characteristics of morphology and of staining reaction. The best explanation for the occurrence of these structures, in Goetsch's opinion, is that the original endodermal lining of the intestinal tube and ophalomesenteric duct posses potentialities of development into any of the glandular structures of the adult intestinal tract or of its accessory glands, and under the influence of certain circumstances, which are not understood, groups of cells may retain one or the other potentiality and develop into a glandular tissue very different from the surrounding glandular tissues and resembling the adult organ, such as stomach or pancreas, which may be far removed.

Phagocytosis and Agglutination of Serum in Acute Lobar Pneumonia.—Of thirty-three cases of acute lobar pneumonia in which the phagocytic activity of the serum after crisis or lysis was tested by Clough, with the homologous strain of pneumococcus, twenty-eight, or 85 per cent., gave definitely positive results. These results confirm and extend those previously reported by the author. In twenty-six, or 79 per cent., of these cases agglutinative activity was also demonstrable. In eighteen cases in which definite phagocytic activity was demonstrable in the serum after recovery either for the homologous strain or for a stock strain of known type, tests were also made with serum obtained during the acute stage of the disease, and negative results were obtained in fifteen. The three serums which showed phagocytic activity were obtained twenty-four hours or less before crisis. Serum was also examined from seven patients who subsequently died of the disease, and negative reactions were obtained in six instances. A positive reaction was obtained in one patient, who, after a short remission, died apparently of sepsis and endocarditis. This phagocytic and agglutinative activity of the serum developed after the recovery from infection with pneumococci of all the recognized types. It was strictly limited to organisms of the same type as that with which the patient was infected, but, as a rule, was exerted equally well on the homologous strain and on heterologous strains of the same type. It is, therefore, specific as to type, but not specific as to strain, as the author originally believed. The agglutinative activity of the serum as observed in these tests paralleled closely the phagocytic activity. In the case of atypical Type II and Type III strains it was not so sharply specific as was the phagocytic activity. This phagocytic activity is entirely different from a possible rise in opsonic index, in that it brings about active phagocytosis of a virulent pneumococcus, not at all phagocytable in normal human serum. The active substances in the serum also differ from the opsonins of normal serum in that they are usually thermostabile; they usually remain active for several weeks in serum preserved in vitro; and when their activity is lost, they cannot be reactivated by fresh normal serum (complement). They are, therefore, qualitatively comparable with the bacteriotropins of potent immune serum. In view of these facts, Clough concludes that this factor plays an important part in bringing about recovery in man.

California State Journal of Medicine, San Francisco

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*Smallpox Increasing in California. A. F. Gillihan, Sacramento.—p. 166.
Observations in Work of Medical Advisory Board of Health Commission. G. L. Cole, Los Angeles.—p. 169.
Absorption Without Needling of Cataractous Lens, Due to Punctured Wound. J. H. McKeller, Los Angeles.—p. 172.
Localization of Foreign Bodies in Eye. W. W. Boardman, San Francisco.—p. 179.
Navy Base Hospital No. 3. G. Cochran, Los Angeles.—p. 180.
*Spinal Anesthesia in Upper Abdominal Surgery. L. L. Stanley, San Quentin.—p. 183.

Smallpox Increasing in California.—Gillihan attempts to show that smallpox is increasing throughout the world, not only in number of cases, but also in death rates, and that California shares in this increase. He says that the mild form of smallpox and the severe reactions following poor methods of vaccination has become almost universal. Vaccination is the only protection against smallpox, but this protection lasts for only a few years, and must be repeated at intervals if an individual desires to avoid the smallpox. Methods of vaccination are recommended which do not produce harmful results. In Gillihan's opinion vaccination should be done by special officers delegated to that duty, it should be done by prescribed methods, and it should be free to all people.

Spinal Anesthesia in Upper Abdominal Surgery.—Stanley analyzes briefly 603 operations done under spinal anesthesia on inmates of the California State Prison. There have not been any bad results.

Illinois Medical Journal, Chicago

June, 1919, **35**, No. 6

Chronic Pancreatitis. H. N. MacKechnie, Chicago.—p. 281.
Tincture of Iodin in Intensive Dosage in Treatment of Tuberculosis and Other Infections Diseases. J. Ritter, Chicago.—p. 285.
Importance of Anaerobic Bacteria to Man. W. L. Holman, Pittsburgh.—p. 289.
Twilight Sleep (Present Status). B. L. Ramsay, Chicago.—p. 297.
Modern Conception of Immunity. A. Rovin, Detroit.—p. 299.
Ideal Organization of Physicians: Physicians' Fellowship Club. W. Johnson, Chicago.—p. 301.
Military Tract Medical Association. R. C. Matheny, Galesburg.—p. 304.
Building and Rebuilding. J. Kercher, Chicago.—p. 307.

Journal of Abnormal Psychology, Boston

December, 1918, **13**, No. 5

Case of Altered Emotions Bearing on Lange James Theory. A. Myerson, Boston.—p. 239.
Concerning Hamlet and Orestes. J. T. MacCurdy, New York.—p. 250.
Anal Erotic Character Traits. E. Jones, London.—p. 261.
Irregularity in Psychologic Examination as Measure of Mental Deterioration. S. L. Pressey and L. W. Cole, Boston.—p. 285.

Journal of Experimental Medicine, Baltimore

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Agglutination Reactions of Morgan Bacillus No. I. I. J. Kigler, New York.—p. 531.
*Edema of Lungs as Cause of Death. M. C. Winternitz and R. A. Lambert, New Haven.—p. 537.
*Etiology of Yellow Fever. I. Symptomatology and Pathologic Findings of Yellow Fever Prevalent in Guayaquil. H. Noguchi, New York.—p. 547.
*Id. II. Transmission Experiments on Yellow Fever. H. Noguchi, New York.—p. 565.
*Id. III. Symptomatology and Pathologic Findings in Animals Infected Experimentally. H. Noguchi, New York.—p. 585.
Passage of Meningococcis Agglutinins from Blood to Spinal Fluid of Monkey. H. L. Amoss and F. Eberson, New York.—p. 597.
*Experiments on Mode of Infection in Epidemic Meningitis. H. L. Amoss and F. Eberson, New York.—p. 605.

Edema of Lungs as Cause of Death.—The importance of pulmonary edema per se as a cause of death is questioned by Winternitz and Lambert. They conclude that edema of the lungs in general is merely an indicator of some underlying disorder and is rarely, if ever, directly responsible for the death of the patient or animal.

Yellow Fever in Guayaquil.—The clinical and pathologic features of the yellow fever prevalent in Guayaquil conform with those described by other investigators of this disease as it has occurred elsewhere, both epidemically and endemically.

Transmission Experiments on Yellow Fever.—By injecting into guinea-pigs the blood of yellow fever cases occurring in Guayaquil a group of symptoms and lesions closely resembling those observed in human yellow fever where induced by Noguchi in a limited number of instances. Of seventy-four guinea-pigs inoculated with specimens of blood from twenty-seven cases of yellow fever, eight, representing six cases, came down with the symptoms. In the blood, liver, and kidneys of the guinea-pigs experimentally infected with the blood of yellow fever patients a minute organism was demonstrated which closely resembles in morphology the causative agent of infectious jaundice (*Leptospira icterohaemorrhagiae*). The leptospira transmitted from yellow fever cases to guinea-pigs was found to induce similar symptoms and lesions on further passage into normal guinea-pigs. The leptospira obtained from cases of yellow fever has been given the provisional name of *Leptospira icteroides*.

Findings in Animals Infected Experimentally with Yellow Fever.—Studies are reported by Noguchi on the type of disease induced in guinea-pigs, dogs and monkeys by inoculating them (1) with the blood or organ emulsions of guinea-pigs or other susceptible animals experimentally infected with *Leptospira icteroides* and (2) with a pure culture of the organism. The symptoms and lesions observed closely parallel those of human yellow fever. The pathologic changes occurring in human cases of yellow fever are similar to those induced by inoculation in guinea-pigs and marmosets and in respect to their intensity stand intermediate between those arising in the two animals mentioned.

Mode of Infection in Epidemic Meningitis.—The experiments reported on by Amoss and Eberson do not lend any support to the notion that an intraspinal injection of the antimeningococcus serum, early in the course of invasion of meningococcus in man, and possibly at a period at which the meninges do not yet show evidences of inflammation, favors its diversion from the blood stream into the subarachnoid space.

Journal of Immunology, Baltimore

January, 1919, **4**, No. 1

*Study of Problems of Immunity by Tissue Culture Method. III. Method for Determining Resistance of Individuals to Diphtheria Infection. M. T. Burrows and Y. Suzuki, St. Louis.—p. 1.
*Antibody Production in Rabbits Following Injection with Pancreatic Ferments. H. Wago, Chicago.—p. 19.
*Red Cell Globulin. C. B. Bennett and C. L. A. Schmidt, Berkeley, Calif.—p. 29.

Immunity by Tissue Culture Method.—Many attempts have been made to devise a simple and accurate laboratory method for determining the presence of toxic and antitoxic substances in the blood of persons suffering from acute infections of various kinds and in the blood of normal individuals. Chicken tissue can be readily cultivated in drops of human plasma. It seemed to Burrows and Suzuki, therefore, that one might use this tissue to develop a method for the detection of small quantities of diphtheria toxin and antitoxic substances in the blood of patients or normal individuals. As an introduction to this particular use of the method they have studied the neutralizing value of the blood of a number of normal adults and children. The blood of twenty-seven adults and eleven children has been studied by this method. In most instances the Schick reaction was also performed. It is evident that this method finds application, with slight variation in the choice of the tissue, not only for the study of diphtheria but for the study of other toxins and antitoxic substances.

Antibody Production by Injecting Pancreatic Ferments.—Wago claims that the precipitins and complement deviating antibodies produced in this manner are distinct from such antibodies as may inhabit the proteolytic ferments of pancreatin. The former, as in the present experiments, may be produced in large amounts in the absence of the production of the latter in any degree whatsoever. Following intravenous injection of pancreatin, the proteolytic ferments and proteins of pancreatin are extensively excreted by the urine. The antigenic value of pancreatin for stimulating the production of antibodies to the contained proteins is enhanced by an alcohol modification of the pancreatin. The production of precipitins to pancreatin as a soluble antigen is favorably influenced by the intravenous injection of sodium iodoxybenzoate. The production of precipitins to pancreatin may be enhanced to the greatest degree by employing alcohol modified pancreatin as antigen and by accompanying its injection with that of sodium iodoxybenzoate.

Red Cell Globulin.—It was found by Bennett and Schmidt that the serums of animals immunized with CO_2 globulin from washed red cells contained immune bodies specific for this globulin and not for the CO_2 globulin from the homologous serums and substances which in the presence of alexin will cause lysis of the homologous red cells and in the absence of alexin cause agglutination of these cells. It is not definitely stated whether the CO_2 globulin from red cells is the antigen concerned in the production of a lysin for the homologous red cell or a substance intimately associated with it. The possibilities are discussed.

Journal of Industrial Hygiene, New York

June, 1919, **1**, No. 2

Use of Army Gas Masks in Industries. A. C. Fieldner and B. B. Fogler, Washington.—p. 69.
Human Health and the American Engineer. G. C. Whipple, Boston.—p. 75.
*Chip Fractures of Terminal Phalanges. W. R. Hurley, Boston.—p. 85.
Inorganic Poisons, Other than Lead, in American Industries. A. Hamilton, Boston.—p. 89.
Medical Inspection of Factory Employees. M. A. Austin, Anderson, Ind.—p. 103.

Chip Fractures of Phalanges.—Hurley reports seven cases in which a small fragment of bone was broken off from the terminal phalanx of a finger by an industrial accident. He urges that all contusions of fingers and toes, especially those accompanied by any degree of swelling, should be examined with the roentgen ray. The general plan of treatment should be expectant at first. In the face of increasing swelling or tenderness after the first few days, or persistent tenderness after the fourth week, the removal of the chip should be accomplished. The sooner the chip is removed after the fourth week, the better the chance of having the wound heal by first intention.

Medical Record, New York

May 31, 1919, **95**, No. 22

*Lobar Pneumonia: Special Use of Antipneumococcus Serum. T. S. Hart, New York.—p. 895.
Idealism in Rhinoplastic Surgery. W. W. Carter, New York.—p. 900.
*Etiology of Thrombo-Angeitis Obliterans. W. Meyer, New York.—p. 901.
Case of Atypical Male Sex Ensemble. A. Stein, New York.—p. 902.
War Lesions of Peripheral Nerves. J. L. Burrow, Leeds, England.—p. 904.

Serotherapy in Lobar Pneumonia.—One hundred and twenty-one cases of primary lobar pneumonia were analyzed by Hart. In every case at least one blood culture was taken; in a number of cases as many as eight or nine cultures were studied. A positive blood culture was obtained in forty cases. The sputum was studied in every case in which a suitable specimen could be secured. Pneumococcus type I was found in thirty-three cases; type II in thirty cases; type III in ten cases and type IV in twenty-three cases. In twenty-five cases miscellaneous organisms were found. Forty-one patients died. Serum was administered in thirty-one cases of type I according to the rules laid down by the Rockefeller investigators. While the evidence presented is fragmentary it seems to indicate that the administration of serum affords a definite aid to nature's effort to sterilize the blood stream. The failures which are recorded are very instructive. In each case there was a localized focus of infection which continued to furnish pneumococci to the blood stream. In one instance this was an empyema; in three others an acute endocarditis was present, and in two of these, which were examined postmortem, there were found on the heart valves fresh vegetations containing pneumococci. Hart emphasizes that a positive blood culture in

lobar pneumonia is usually an indication that one may expect a severe course. It is rare for a patient who has received serum to escape a subsequent "serum illness." This may be mild or severe, but bears no relationship to the amount of serum given. Serum illness in these cases does not endanger life.

Etiology of Thrombo-Angeitis Obliterans.—Further study and observation of patients suffering from so-called thromboangeitis obliterans have led Meyer to the conviction that this trouble is a systemic disease and not, as Buerger believes, a primary affection of the blood vessels. In his opinion there seems to be just one etiologic factor responsible for the characteristic syndrome, and that is tobacco smoke poisoning.

June 7, 1919, **95**, No. 23

Occupation Therapy and Tuberculosis. W. R. Dunton, Towson, Md. —p. 941.
Some Experiences with U. S. Army Base Hospital No. 37. H. M. Moses, Brooklyn.—p. 945.
*Gonococcus Pneumonia: Report of Probable Case. M. Ross, New York.—p. 950.
Need of Cooperation Between Medical and Dental Professions. S. Herder, Mount Vernon, N. Y.—p. 952.
Immediate Active Mobilization in Treatment of Gunshot Wounds of Joints. C. Willems, Bruges, Belgium.—p. 953.

June 21, 1919, **95**, No. 25

Outlook and Problems of Public Health. A. H. Doty, New York.—p. 1037.
Jaundice. M. Einhorn, New York.—p. 1043.
Etiology and Prophylaxis of Relapse in Morphinism. C. B. Pearson, Catonsville, Md.—p. 1047.
Course in Medical Dietetics. L. Baumann, Iowa City.—p. 1051.
Case of True Mediastinal Emphysema. G. F. Boehme, Jr., New York. —p. 1052.
War Industrial Diseases. A. Hamilton, Chicago.—p. 1053.

Gonococcus Pneumonia.—The organism obtained by Ross from the blood, the sputum and direct stab of the lung in his case was a gram-negative diplococcus in pure culture, while the patient was known to have an acute exacerbation of a chronic gonorrhea. The lobar pneumonia followed an atypical course. The sputum was scanty, very tenacious, milky white, with no trace of blood at any time. The lung process terminated in pulmonary abscesses.

Michigan State Medical Society Journal, Grand Rapids

June, 1919, **18**, No. 6

Ureter Stone; Diagnosis and Treatment. P. L. Thompson, Grand Rapids.—p. 315.
Circulatory Diseases of Brain with Report of 351 Cases of Arterio-Sclerosis. S. Gregg, Kalamazoo.—p. 323.
*Treatment of Influenzal Pneumonia by Intravenous Injection of Non-specific Protein. T. L. Squier, Ann Arbor.—p. 328.
Tonsillectomy Technic. J. M. Robb, Detroit.—p. 333.

Nonspecific Proteins in Influenzal Pneumonia.—Two cases are reported by Squier in which homologous citrated blood was transfused. Transfusion produced a severe reaction followed by a drop in temperature by crisis and by prompt recovery. Two transfusions with immune blood which caused no reaction were followed by no change in the temperature, pulse, respiration or general physical condition. When typhoid substance was used (in two cases) and a typical protein reaction obtained there was in each instance a sharp fall in temperature and a dramatic improvement in the patient. These results have led Squier to believe that nonspecific protein therapy has a very definite and important place in the treatment of influenzal pneumonia.

Missouri State Medical Association Journal, St. Louis

June, 1919, **16**, No. 6

Plea for Early Recognition of Stomach Malignancies. E. H. Kessler, St. Louis.—p. 181.
Impressions from Five and a Half Months' Service in a British Venereal Hospital in France. H. M. Young, St. Louis.—p. 183.
Chronic Influenza. D. G. Stine, Columbia.—p. 187.

Modern Hospital, Chicago

June, 1919, **12**, No. 6

Mural Decorations of Indianapolis City Hospital. E. Cleland, Indianapolis.—p. 395.
Nurses' Home at Bennington, Vt. H. L. Walker.—p. 400.
Two Factors in Hospital Standardization. A. R. Warner, Cleveland. —p. 402.
Music Takes First Place in Reconstruction Work. J. W. Harting, New York.—p. 404.
Children's Heart Hospital at Brookline, Mass. J. L. Morse, Brookline.—p. 406.
Development of Hospital Ward Unit of U. S. Army. E. F. Stevens, Boston.—p. 408.
Hinged Window for Use of Hospital. C. Butler, New York.—p. 416.
Consolidation of Hospital Services. L. J. Frank, New York.—p. 418.
Plan for Laboratory Training of Nurses. H. J. Goeckel, Plainfield, N. J.—p. 422.
Little Journeys to Places "Over There." M. J. Robinson, American Red Cross.—p. 423.

New York Medical Journal

June 14, 1919, **109**, No. 24

Medicine, A Determining Factor in War. A. Lambert, New York.—p. 1013.
Cesarean Section Following Previous Extraperitoneal Cesarean Section. J. W. Markoe, New York.—p. 1022.
Willems Treatment (Mobilization) of Knee Joint War Injuries. C. A. McWilliams, New York.—p. 1024.
Medical Modernization of Back Country. W. B. Konkle, Montoursville, Pa.—p. 1026.
Remote Danger of Chickenpox and Measles in Children. L. Kerr, Brooklyn.—p. 1027.
Fracture and Dislocation of Dorsal Spine with Complete Rupture of Cord. R. Hertzberg, Stamford, Conn.—p. 1028.
Problem of Syphilis as Affecting Our Soldiers. C. Wolf, New York. —p. 1032.
Report of Bone Graft Cases. J. A. Miller, New York.—p. 1033.

New Jersey Medical Society Journal, Orange

June, 1919, **16**, No. 6

Tuberculosis Situation and Tuberculosis Clinic in Burlington County, N. J. M. W. Newcomb, Brown's Mills.—p. 185.
War Surgery and Its Application to Civil Practice. H. B. Epstein, Newark.—p. 188.
Treatment of Gonorrhea in Male. C. H. D. T. Shivers, Atlantic City.—p. 192.
Americanism; Appeal to Medical Profession to Enter Public Life. W. P. Eagleton, Newark.—p. 195.

Ohio State Medical Journal, Columbus

June 1, 1919, **15**, No. 6

Herpes Zoster Oticus. Review of Literature and Report of Case. J. E. Brown, Columbus.—p. 332.
Prenatal Care. S. J. Goodman, Columbus.—p. 337.
Simplified Technic for Removal of Faucial Tonsils; Especially Nonfibrous, Soft and Submerged Tonsils; New Tonsil Hook. L. F. Long, Zanesville.—p. 343.

Surgery, Gynecology and Obstetrics, Chicago

June, 1919, **28**, No. 6

*Experimental Production of Pancreatitis in Animals as Result of Resistance of Common Duct Sphincter. E. Archibald.—p. 529.
*Treatment of Purulent Arthritis by Wide Arthrotomy Followed by Immediate Active Mobilization. C. Willems.—p. 546.
*Roentgenographic Diagnosis in Renal Tuberculosis. W. F. Braasch and F. A. Olson, Rochester.—p. 555.
Acute Intestinal Obstruction Following Appendectomy: Report of Cases. A. H. Harrigan, New York.—p. 561.
*Status of Vesical Sphincter After Prostatectomy. E. M. Watson, Buffalo.—p. 569.
The Acute Abdomen. F. G. Connell, Oshkosh.—p. 583.
*Laparoplasty by a New Method. W. Van Hook, Chicago.—p. 598.
*Acute Appendicitis Complicating Epidemic Influenza; Report of Eight Cases. M. Behrend, Philadelphia.—p. 601.
Primary Suture of War Wounds. G. Gross.—p. 603.
*Method of Exposing Musculospiral and Posterior Interosseous Nerves. B. Stookey and S. Guild.—p. 612.
Necessity for Special Positions in Roentgenographic Study of Shoulder Cases. W. W. Boardman and M. Donovan, San Francisco.—p. 615.

Experimental Production of Pancreatitis.—Archibald, records experiments performed with the view to induce pancreatitis with bile, by forcing this bile into the pancreas. The experiments were successful. An acute hemorrhagic pancreatitis was produced, with death in half an hour. Archibald used ox bile infected with various organisms, human bile from a cholecystostomy case, passed through a Berkefeld filter and autoclaved and solutions of bile salts. The lesions produced in the pancreas by these methods of experimentation were brought about entirely through the action of the common duct sphincter, combined usually, but

not always, with some increase of pressure. This increase in pressure need be very slight, indeed but little over normal bile pressure in the common duct, or may be even quite absent. This is the ordinary mechanism at work in human cases, even when gallstones are present. In these animals there was no question of any mechanical obstruction to the outflow of bile into the duodenum. The obstruction was purely a physiologic one. Most of the main types of lesion in the pancreas found in clinical practice were produced in this way. The experiments also seem to show very clearly that the necrosis of the pancreas is the direct result of the action of substances entering the duct of Wirsung, such as the bile salts, unmixed with bile colloids, or such as artificial gastric juice, or a whole series of acids and strong alkalies. Archibald belives that the extent of necrosis is determined at the very outset of the disease by the grade of virulence and extent of permeation of the noxious agent. Succeeding invasions of bile may increase the extent of necrosis. Liver necroses, of the type now well known as focal necroses occurring in the course of pancreatitis, were found with great regularity, both in fatal and in light cases; and were present within twenty minutes of operation. The severe cases with early death were all in the series in which infected bile was used. Sterilized mucin-free bile, and the bile salts in solution caused, it is true, necrosis of the gland, but a degree easily consistent with recovery; while the infected ox bile almost regularly caused early death, usually with, occasionally without, severe lesions in the pancreas. The surgical treatment of pancreatitis, Archibald says, must chiefly lie in a prevention of any further retrojection of bile into the pancreas. The damage already done to the organ will often be cured by the processes of nature, absorption, replacement, or even sequestration. On the other hand, if gangrene, abscess, or total slough has occurred, it may require a direct attack on the pancreas itself. But to prevent recurrence or extension the cardinal point would seem to lie in the prevention of any heightened pressure in the biliary system, and secondly in the restoration of an altered bile to its normal chemical condition, or of an infected bile to sterile bile. This can only be done by a drain in the gallbladder or in the common duct. The essential thing lies in prolonged drainage.

Treatment of Purulent Arthritis.—The history of cases of purulent arthritis of the elbow, knee and instep, due either to the diplococcus, staphylococcus or the streptococcus, with or without intra-articular fracture is given by Willems. These have been treated by simple arthrotomy followed by immediate active mobilization without any other means of drainage and without lavage. In all these cases drainage has been perfect, the temperature has not been high, the general state has remained excellent, infection has been confined to the synovia, there has been little or no atrophy, and articular mobility has been integrally preserved.

Roentgenographic Diagnosis in Renal Tuberculosis.—In Braasch and Olson's opinion the value of roentgenographic diagnosis of renal tuberculosis does not appear to be fully appreciated. They claim that shadows may be found in approximately 20 per cent. of patients with renal tuberculosis. Positive evidence of tuberculosis may be obtained by this method when all other clinical data fail, and when cystoscopic examination is impossible. Pyelography is occasionally valuable (1) in the identification of renal infections of doubtful nature and (2) in the identification of doubtful shadows in the renal area.

Vesical Sphincter After Prostatectomy.—A study of twenty-five cases convinces Watson that following perineal prostatectomy the internal or vesical sphincter returns to its normal tone and function in every instance within a few weeks.

Laparoplasty by a New Method.—The laparoplasty devised by Van Hook for relaxed, pouching, or pendulous abdomens consists in raising two triangular flaps, points down of anterior rectus fascia and part of the external oblique muscle and fascia. The tip of the left flap is sutured over to the right Poupart's ligament and pubis spine and vice versa in the case of the right flap. From a point in the median line about 1 or 2 inches above the symphysis pubic incisions to the right and left are made starting at right angles to the median line but, at the outer edge of the recti, turning upward and outward in the direction of the fibers of the external oblique muscle and extending to a distance of 6 or more inches on each side, splitting that muscle. Next, each of the triangular flaps thus produced, of which the apices point downward, is lifted carefully by separating the external oblique muscles (bearing their aponeuroses) up to the recti from the underlying internal oblique muscles. Then the anterior plates of the rectus sheaths are dissected up from the muscle bodies. These connective tissue membranes lifted off from the bodies of the muscles, leave the recti bodies in their normal beds. The raised rectus sheath flaps are now in continuity with the bodies and aponeuroses of the external oblique muscles. The next step is the crossing and reattachment of these flaps at points much lower than those to which they extended previously. The patient is placed in the Trendelenburg posture, then flex the knees and moderately flex the thighs on the abdomen, providing under the legs a suitable support. This diminishes the pressure within the lower abdomen, thereby relaxing the muscles of the abdominal wall and also, by anteriorly flexing the spine, lessens the distance between the ensiform cartilage and the pubic bone. The left flap is drawn downward to the right of the pubic bone, across the median line, until it is almost taut. It is carefully sutured to the aponeurosis of the right external oblique, to Poupart's ligament and the anterior sheath of the right rectus muscle at a level much nearer the pubes than that from which it was raised. The flap of the right side is similarly carried downward and to the left over the left rectus muscle and over the first flap and sutured in position. The skin and subcutaneous fat are extensively retranched and the T-shaped skin incision closed.

Acute Appendicitis Complicating Epidemic Influenza.—None of Behrend's patients gave a previous history of appendictis. In one the appendix ruptured while in two pus was contained in the appendix. All the patients recovered. Five were not operated on because it was feared that the prevalence of râles in the lungs would eventually result in pneumonia. On account of "wet" lung the administration of an anesthetic was feared.

Exposure of Musculospiral and Posterior Interosseous Nerves.—The authors describe three incisions for the exposure of the musculospiral nerve from the lower border of the teres major muscle down to the antecubital fossa. The first incision lies in a line from the tip of the olecranon to the posterior angle of the acromion. It begins three fingers breadth below the acromion and continues directly downward along the above line to 5 centimeters below the level of the insertion of the deltoid. The second incision runs parallel to the first except in its lower part, where it is slightly curved toward the anterior side. It begins about 12 centimeters above the antecubital fossa external to the brachialis anticus and between it and the almost longitudinal fibers of the supinator longus. The third incision is made midway between the other two and parallel to the first. It should extend from 3 centimeters above the level of the insertion of the deltoid directly downward for about 12 centimeters.

West Virginia Medical Journal, Huntington

June, 1919, **13**, No. 12

Abdominal Drainage. F. L. M. Hupp, Wheeling.—p. 441.
Medical Progress. C. H. Henry, Fairmont.—p. 448.
Gallstone Disease Complicating Pregnancy. A. P. Heineck, Chicago. —p. 451.
Lethargic Encephalitis. W. E. Vest, Huntington.—p. 454.

War Medicine, Paris

February-March, 1919, **2**, No. 7

Nerve Injuries: Operative Indications Based on Functional State and Anatomic Examination of Nerve. A. Thomas.—p. 1351.
Traumatic Shock. W. B. Cannon.—p. 1367.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

China Medical Journal, Shanghai

January, 1919, **33**, No. 1

*Blood Changes in Kala-Azar after Splenectomy: Therapeutic Value of Operation. E. M. Johnstone.—p. 1.
*Case of Kala-Azar, Treated with Tartar Emetic. H. W. Bell.—p. 13.
Chronic Subtertian Malaria. J. H. Korns.—p. 14.
Foreign Body in Parotid Region; Extraction; Cervico-Thoracic Gaseous Phlegmon and Hemorrhage; Ligation of Common Carotid. L. Casabianca.—p. 18.
Importance of some Minor Eye Operations. J. N. MacPhail.—p. 23.
*Case of Cesarean Section Presenting Unusual Difficulties. E. C. Peake.—p. 30.
*Case of Suprapubic Lithotomy: New Method of Drainage. C. H. Barlow.—p. 32.
*Comparative Value of Thymol and Chenopodium in Treatment of Uncinariasis. N. Bercovitz.—p. 34.
*Medical Notes from Kansu. G. E. King.—p. 38.

***Blood Changes in Kala-Azar After Splenectomy.**—Johnstone's paper is based on a study of two cases. The findings were as follows: Immediately after splenectomy there may be an enormous increase of leukocytes. In one case the leukocytes rose from 2,000 to 32,000. These leukocytes, during the first few days after operation, were a new type of cell which Johnstone calls the "horseshoe nucleus" polymorphonuclear neutrophilic leukocyte. He believes these cells to be an intermediate form between a myelocyte and a mature neutrophilic polymorphonuclear leukocyte. At the end of about seven days after operation they gradually disappear and a leukocytosis of the usual type of irregular lobed polymorphonuclear leukocyte persists. Johnstone observed cells which he believes furnish presumptive evidence of transformation of the embryonic "horseshoe nucleus" cell into the mature form while in the circulating blood. These cells are probably "stored cells," i. e., embryonic granular cells in bone marrow and other blood forming tissues which are prematurely thrown into the blood stream because of a profound stimulus associated with splenectomy. One of the patients died suddenly after three months probably from thrombosis of the large veins of the portal system. Johnstone is convinced that in a case of mild infection where the liver is not enlarged and the patient is in fair condition the effect of splenectomy is undoubtedly good. One patient, illustrating this condition, appears to be free of Leishmania-donovani and almost free of all symptoms a year and a half after operation. But in a case of severe infection where the liver, as well as the spleen, is enlarged, if also the patient is in poor condition, and if the reaction to transfusion of whole blood is slight, the prognosis for splenectomy is poor. The second case cited by Johnstone strongly suggests this conclusion. The blood changes after operation corresponded exactly to the progressive recurrence of his kala-azar symptoms. Johnstone urges as a logical method of treating kala-azar: First, use injections of tartar emetic, give transfusions of blood, use general hygienic and supportive measures until the patient is improved. If he fails to respond to these he will probably also fail to respond to and benefit by splenectomy. Later, splenectomy may be done if the above measures indicate a good prognosis, and if it is apparent that parasites in the spleen are not reached by the drug. If the liver is enlarged, if the patient is in poor condition, and if response to blood transfusions is slight or absent, splenectomy is contraindicated. Follow splenectomy by continued injections of tartar emetic or antimony ointment inunctions to destroy the parasites still present in the blood stream and lymph glands and other tissues. Also continue transfusions of blood, if necessary, and give continued attention to good nourishment, fresh air, and general supportive and hygienic measures.

Kala-Azar Treated with Tartar Emetic.—The tartar emetic treatment in Bell's case was carried out by means of injections of a 2 per cent. solution into the veins of the arm. Very often the injections caused an immediate attack of coughing with watery expectoration, which passed off in a few minutes. No other unpleasant effects were produced, except on one occasion when the patient became collapsed just after the injection had been given. He quickly recovered, and felt no after effects.

Cesarean Section Presenting Unusual Difficulties.—The difficulties encountered by Peake in his case may be summed up as follows: (1) Extremely critical general condition of the patient; (2) intestines under pressure immediately below peritoneal incision and protruding in an unruly and aggressive manner; (3) placenta directly under uterine incision; (4) fetal head wedged tightly into maternal pelvis, the result of forceps traction; (5); free hemorrhage from wound in lax and inert uterine walls; (6) critical condition of the infant, due to prolonged and very severe compression of the brain, and the fact that the placenta was detached several minutes before the child could be extricated. Both mother and child made a rapid and complete recovery.

Case of Suprapubic Lithotomy.—The method of drainage resorted to by Barlow was first described by his associate Chang in the China Medical Journal, July, 1918. It consists of a large rubber drainage tube being inserted into the bladder, containing a rubber catheter. To the end of this catheter is attached a syringe used to pump the urine out of the bladder.

Treatment of Uncinariasis.—In a series of 126 cases thymol was given by Bercovitz in hard gelatin capsules, 30 grains each of thymol and sodium bicarbonate being administered in two doses, one hour apart, followed by an ounce of magnesium sulphate one hour after the last dose. Chenopodium was given in hot coffee, or simple syrup; from 20 to 36 drops, according to the weight of the patient, administered in two doses, one hour apart, followed by an ounce of magnesium sulphate one hour after the last dose. There is over 40 per cent. difference between the two drugs in favor of chenopodium in the case of the girls; and about 20 per cent. difference in favor of chenopodium in the case of the boys, with a difference of over 25 per cent. in favor of chenopodium if all cases are grouped together. It is also a safer drug than thymol, and it is easy of administration, being economical in time, as well as more pleasant to the patient. In addition, oil of chenopodium is effective as a vermifuge for *Ascaris lumbricoides*, and thus two infections are cured by one remedy. One point must be noted against chenopodium. At least ten days or two weeks should elapse before a reexamination of the feces is made.

Causal Relationship Between Heat and Cancer.—King refers to cases of epithelioma over the great trochanter induced by irritation from sleeping on the hot *k'ang*, or bed over an oven. He says that it is almost possible to tell Kansu people from the pigmented patch over each trochanter which so often develops into an epitheliomatous ulcer. This confirms the existence of a causal relationship between heat and cancer.

March, 1919, **33**, No. 2

Treatment of Tonsil Infections. A. H. Norton.—p. 101.
*Blood Picture in Amebic Dysentery. W. Fischer.—p. 108.
*Unusual Case of Multiple Carcinomas. R. G. Mills.—p. 112.
Measures to Prevent Dissemination of Disease. J. S. McLester. —p. 123.
*Magnesium Chlorid as Antiseptic in Surgery. D. Spourgitis.—p. 127.
Eczematoid Epidermophyton Infection in China. H. Dohl.—p. 133.
Studies in Sanitation in China. III. Relation of Sewage to Agriculture and Public Health. N. Bercovitz.—p. 138.

Blood Picture in Amebic Dysentery.—An examination of the blood of thirty patients was made by Fischer. In cases of uncomplicated amebic dysentery, he found a moderate neutrophil leukocytosis. The eosinophil cells of the blood were not increased but rather diminished. The number of the large mononuclear and transitional cells was not altered. Therefore, there is no typical change of the blood picture in cases of amebic dysentery, and no typical change of the blood picture during the course of the dysentery. Consequently, the blood picture in these cases does not, as a rule, give much valuable information for diagnostic or therapeutic purposes.

Unusual Case of Multiple Carcinomas.—Mills' patient was a woman, 51 years of age, who had a recurrent carci-

noma of the breast and a pleuritic effusion. Her maternal grandmother died of carcinoma of the breast and her mother was operated on successfully for the same condition. An older sister died of carcinoma of the stomach described as being of the "leather stomach" variety. The paternal grandfather died of carcinoma of the face, and a granddaughter of this man by a second wife died of cancer. Two uncles in the same family also were afflicted with cancer and one or two cousins were similarly affected.

Magnesium Chlorid as Antiseptic in Surgery.—Cases are cited by Spourgitis to show the superiority of magnesium chlorid as an antiseptic in surgery over phenol and bichlorid of mercury.

Indian Medical Gazette, Calcutta

May, 1919, 54, No. 5

*Tendon Transplantation and Fixation for Nerve Injuries. R. F. Standage.—p. 161.
*Sodium Hydnocarpate (Sodium Gynocardate A) and Trial of Sodium Morrhuate in Leprosy. L. Rogers.—p. 165.
*Chemical Nature of Margosic Acids (Fatty Acids of Nim or Margosa Oil). K. K. Chatterjee.—p. 171.
Radical Cure of Hydrocele by Plication. K. K. Chatterjee.—p. 174.
Radical Cure of Inguinal Hernia: Plea for Greater Simplicity. E. F. Neve.—p. 175.

Tendon Transplantation.—In the operative treatment of nerves and paralyzed muscles Standage and his associates have been guided by the work of Robert Jones on poliomyelitis, and they have successfully applied his methods of tendon transplantation and fixation in cases unsuitable for nerve suture, or in cases in which nerve suture had failed. This operation has been carried out for three types of nerve injury: (*a*) Irreparable injury to the musculospinal nerve with wrist drop; (*b*) similar injury to the median nerve; (*c*) injury to the musculocutaneous nerve in the leg with paralysis of the peronei muscles and resulting pes equino varus.

Hydnocarpic Acid in Leprosy.—As Rogers's experiments have indicated that the sodium salt of hydnocarpic acid is probably most active in leprosy, he has treated a further series of cases with a preparation made of Hydnocarpus wightiana oil consisting mainly of sodium hydnocarpate with sufficient of the lower melting point acids to make it soluble, but also containing a little sodium chaulmoograte, as these acids are so closely related that they can only be separated in pure form by very prolonged fractionation. This preparation, as well as that which in former papers was called "sodium gynocardate A," is now referred to by the more correct term hydnocarpate of soda. The great reduction in the numbers of the lepra bacilli before and after treatment and their frequent total disappeaance is a very satisfactory feature of the series, while the number of cases in which lesions disappeared in less than a year is also noteworthy. In only one of fourteen cases was but slight improvement obtained.

Margosates in Skin Lesions.—Chatterjee details the results obtained in the treatment of cases of syphilis, leprosy, skin disease, filariasis, septic infections and ulcers with ethyl ester margosic and hydrargyri margosatis. The experience has been very satisfactory.

Japan Medical World, Tokyo

May 11, 1919

*Prophylactic Vaccination of Tuberculosis. K. Shiga.

May 18, 1919

Treatment of Hemorrhoids. T. Sato.

Prophylactic Vaccination of Tuberculosis.—The vaccine used by Shiga is the sensitized bacillary emulsion prepared with the avirulent strain obtained by cultivating the common virulent tubercle bacilli in a medium containing trypoflavin. The emulsion contains, besides the sensitized bacilli, a certain amount of the filtrated fluid of erythrodin broth medium. It, therefore, consists of the whole antigen of tubercle bacillus. Good results are claimed for this procedure.

Lancet, London

June 7, 1919, 2, No. 4997

Rôle of Sympathetic Nervous System in Diabetes Insipidus and Circulatory Diseases. W. L. Brown.—p. 965.
*Infecting Agent in Influenza: Experimental Research. T. Yamanouchi, K. Sakakami and S. Iwashima.—p. 971.
*Treatment of Bone Sinuses by Solid Metal Drains. C. J. Symonds. —p. 971.
Fistula of Parotid in War Wounds of Face and Jaws. P. P. Cole. —p. 971.
*Blood Transfusion by Citrate Method. A. Fleming and A. B. Porteous. —p. 973.
Case of Peptic Ulcer with Grave Anemia Treated by Intravenous Injection of Whole Blood. E. L. Hunt and H. Ingleby.—p. 975.
*New Method of Incision of Tympanic Membrane for Acute Otitis. R. Lake.—p. 977.
Secondary Suture of Wounds. R. A. Stoney.—p. 978.
Hereditary Malformation of Extremities. W. J. Rutherfurd and B. G. R. Crawford.—p. 979.
Case of Recurring Effusion into Pericardial Sac. H. B. Roderick and S. W. Curl.—p. 980.
Comminuted Fracture of Humerus. W. F. Buckley.—p. 981.

Infecting Agent in Influenza.—Yamanouchi and his associates report on their experiments made to find the exciting cause of influenza. An emulsion of the sputum from forty-three influenza patients was made in Ringer's solution. This emulsion was injected into the nose and throat of twelve healthy persons. A filtrate (by Berkefeld filter) of the same emulsion was injected into the nose and throat of twelve other healthy persons. Among the subjects treated were six persons who had already had influenza, and all six were free from symptoms of illness. But all of the other eighteen subjects, both those who had received the emulsion and those who had received only the filtrate were attacked by the disease, after an incubation of two or three days. Their fever was sometimes slight, sometimes very severe. The subsequent symptoms were headache, sore throat, lumbago, cough and the like. A filtrate of blood of influenza patients was injected into the nose and throat of six more healthy persons. The results were precisely the same as in the previous experiments. The authors inoculated subcutaneously four healthy persons with the filtrate of the sputum emulsion and four others with a filtrate of the blood of influenza patients. They all, with the exception of one who had previously had influenza, developed the disease after two or three days' incubation. A pure culture of Pfeiffer's bacillus and a mixed preparation of the pure Pfeiffer bacillus, along with pneumoncocci, streptococci, staphylococci, diplococci and many other like microbes common in the sputum of influenza patients, were injected into the throat and nose of fourteen healthy people who had not had influenza. There were no symptoms of illness following these injections.

Treatment of Bone Sinuses by Solid Metal Drains.—Symonds uses both hollow and solid metal drains in the troublesome sequelae of fractures and gutshot injuries. The metal prevents closure of the orifice. It also rapidly reduces the septic changes, and by preventing retention of pus, with consequent decomposition and infective osteitis permits the formation of new material and closure of the cavity. The rod is smooth, has a rounded end, and can be removed and inserted without any injury. When substituted for gauze the beneficial effects are at once evident in the disappearance of the surrounding dermatitis and marginal granulations and the decrease in the discharge. Pain, where existing, rapidly subsides and very soon a retraction of the orifice is seen. Symonds uses a glass rod, bent to any desired angle.

Blood Transfusion by Citrate Method.—After having used this method in 100 cases Fleming and Porteous are convinced that it is as good as those of any of the more complicated and difficult methods.

New Method of Incision of Tympanic Membrane.—Lake makes a crescentic or curved incision following the contour of the edge and of about the same extent of the posterior superior quadrant—i. e., a curved incision with the convexity upward. He claims that better drainage is obtained.

Quarterly Journal of Medicine, Oxford, England

April, 1919, **12**, No. 47

*Intrathoracic Pressure in Hemothorax, Pneumothorax, and Pleural Effusion, and Effects of Aspiration and of Oxygen Replacement. G. C. Shattuck and E. S. Welles.—p. 151.
*Study of Contralateral Signs in Gunshot Wounds and Injuries of Chest. S. W. Curl.—p. 161.
*Two Cases of Endocarditis Due to Bacillus Influenzae. A. Malloch and L. J. Rhea.—p. 174.
*Therapeutic Action of Digitalis on Rapid, Regular, Rheumatic Heart. G. A. Sutherland.—p. 183.
*Acute Leukemia and So-Called Mediastinal "Leukosarcomatosis" (Sternberg): Case Accompanied by Myeloid Substitution of Hilus Fat of Kidneys. F. P. Weber.—p. 212.
*Two Cases of Diabetes Insipidus: Literature Relating to Association Between Pituitary Gland and This Disease. E. L. Kennaway and J. C. Mottram.—p. 225.
*Filter Passing Virus of Influenza. J. R. Bradford, E. F. Bashford and J. A. Wilson.—p. 259.

Intrathoracic Pressure in Hemothorax, Etc.—According to Shattuck and Welles fluid or air in the pleural cavity reduces the normal negative pressure and may convert it into a positive pressure. The degree of reduction of intrathoracic pressure depends on the volume of fluid or of air or of both in the cavity. Small hemothoraces do not give positive mean pressures. Large hemothoraces of hemopneumothoraces may do so. The pressure in a sterile hemothorax changes little during the first sixteen days after wounding. The respiratory excursion of pressure in small hemothoraces increases gradually during the first sixteen days after wounding. The respiratory excursion in large hemothoraces is less than in small ones. The excursion seems to be greater when there is air in the pleural cavity than when there is fluid only. Pressures observed in pleural effusions were similar to those in hemothorax. By simultaneous replacement of fluid withdrawn by oxygen volume for volume, existing pressure in the pleural cavity can be maintained.

Contralateral Signs in Gunshot Wounds.—When first taking up the study of gunshot wounds of the chest Curl says he was forcibly impressed by the apparent great frequency with which, in the case of injury to one side, abnormal signs were to be found on the uninjured side. He groups the cases presenting centralateral signs as follows: 1. Those with contralateral pleurisy. 2. Those with contralateral pneumonia. 3. Those in which no clear evidence of pneumonia exists and in which the presence of râles forms the chief, if not the sole, contralateral sign. 4. Those in which the physical signs suggest a condition of consolidation or condensation of lung tissue and do not conform to any of the preceding conditions. Up to the early part of this year Curl's series of sixty cases presented twenty-nine contralateral signs of one kind or another, as follows: Pleurisy in four cases; pneumonia in four cases; râles in seven cases; signs suggesting pulmonary consolidation or condensation, with or without the presence of râles in fourteen cases.

Two Cases of Endocarditis Due to Influenza Bacillus.—A man, aged 39, was admitted to the hospital on the third day of the disease with a diagnosis of bronchitis. He had dyspnea and pain in the right side of the chest with signs of consolidation of the right lung and of left base. His case was diagnosed on the sixth day as lobar pneumonia, but the diagnosis was changed on the twelfth day to confluent influenzal bronchopneumonia because of the finding of *B. influenzae* as the predominating organism in the sputum. Examination of the heart was negative. The temperature was subnormal with rapid respiration and pulse. Heavy sweats. Death on thirteenth day. Postmortem examination showed bilateral confluent bronchopneumonia; dilated right heart, syphilitic aortitis also involving aortic ring; acute vegetative endocarditis of aortic cusps; mild chronic interstitial nephritis. *B. influenzae* was grown in pure culture from the terminal bronchioles, from the heart's blood, and from vegetations on the aortic cusps. Another man, aged 44, was admitted on the fourth day of the disease, with a diagnosis of bronchopneumonia. Onset with chill after getting wet. The man had cough, pain in the chest, dyspnea, cyanosis, signs of capillary bronchitis. The case was diagnosed as influenzal bronchopneumonia on account of the nummular character of the sputum and the presence of *B. Influenzae* as the predominant organism in it. The heart was enlarged but no murmurs were heard. Dyspnea and cyanosis increased; sweats, "septic" temperature; death on sixth day. Postmortem examination showed a bilateral capillary bronchitis and bronchopneumonia; dilatation of the right heart, hypertrophy of both sides; an old endocarditis of the aortic cusps (slight); acute vegetative endocarditis of the aortic cusps and on otherwise healthy mitral cusps; large "septic" spleen; slight chronic interstitial nephritis. Cultures from the terminal bronchi and from the center of the aortic vegetations yielded *B. influenzae* in pure culture. The culture from the heart's blood was negative.

Therapeutic Action of Digitalis.—A study of the effect of digitalis in these cases has convinced Sutherland that this drug can be used with as much confidence in its efficient and beneficial action as in cases of auricular fibrillation. In the former digitalis is given with a view to its acting on the sinoauricular node, while in the latter its action is directed to the auriculoventricular node and bundle. In both cases a slowing of the ventricular rate is aimed at and provided that there is a sufficiency of sound contractile tissue in the ventricles, the natural powers of the heart are capable of restoring a weakened or failing circulation.

Acute Leukemia and Mediastinal "Leukosarcomatosis."—In only one of six cases of this disease was Weber able, by the help of roentgen-ray examination and by the microscopic blood picture, to make the diagnosis during life. The boy was admitted to the hospital with fever, respiratory distress, and ascites, and was at first supposed to be suffering from tuberculosis. However, his extreme pallor and the presence of cutaneous petechiae suggested an examination of the blood, which revealed the leukemic blood picture. Owing partly to his peculiar dyspnea a roentgenogram of the thorax was taken, and this showed great shadowing at the base of the heart, suggesting the presence of a tumorlike mass in the mediastinum.

Two Cases of Diabetes Insipidus.—Data are given by Kennaway and Mottram as to the composition of the urine, and its molecular concentration in comparison with that of the serum, in two cases of diabetes insipidus. When large amounts of sodium chlorid are given, the diuresis is so adjusted that the percentage of nitrogen plus chlorid in the urine remains unaltered; the kidney, therefore, lacks the power of concentration which is exhibited normally after the ingestion of salt. The antidiuretic effect of pituitary extract given by subcutaneous injection was demonstrated both in a normal subject and in a case of diabetes insipidus; administration of such preparations by the mouth is ineffectual. No record has been found by the authors in the literature of any case of diabetes insipidus in which abnormality of the pituitary was excluded with certainty by postmortem examination, whereas in a considerable number of cases the disease has been associated with a lesion of the posterior lobe of the gland. However, such lesions are not invariably accompanied by diabetes insipidus. The evidence of morbid anatomy as to a connection between the pituitary gland and diabetes insipidus is therefore inconclusive, but the immediate restoration of a normal state of the urine when pituitary extract is given in diabetes insipidus provides the strongest evidence for the normal activity of the gland in regulating the secretion of urine.

Filter Passing Virus of Influenza.—The result of the experiments described by the authors, it is claimed, establish that all the lesions of influenza have been reproduced in animals by the injection of pure cultures of an organism isolated from man, and they fulfill all the requirements necessary to establish that organism as the cause of the disease. In the first place, the disease was reproduced in attenuated form as in polyneuritis. The increase in virulence by passage so that, e. g., the mortality in subdural inoculations rose from a probable four in six to a real mortality of three in three, and perhaps the fatal effects produced in all pigs reinoculated for the third time, may have

a bearing on the greater severity of late phases of the present epidemic. The success of subdural inoculation and the rapidity of onset thereafter may give support to the opinion that the organism finds entrance to the body via the nasopharynx, but does not exclude other means of entrance. The numerous sites in which the organism is found in the body, and its presence in the bile and kidney and also the urine of monkeys, show that the nasopharyngeal mucus is not the only channel of its excretion. The prolonged residence of the organism in the tissues may likewise be of epidemiologic significance in the production of strains of heightened virulence. The authors point out that influenza should no longer be regarded as primarily a disease of the lung. The process is exactly the reverse. The lung is not attacked through the air passages by a gradual extension downward from the higher respiratory passages to the alveoli. The lungs are attacked from within the body throughout their entire vascular mechanism from the blood stream, in company with other organs in varying degree. Masses of dead or disorganized tissue and blood clot and the disorganization of respiration soon provide not only foci for local secondary infective processes, but also means by which the secondary infections, in their turn, come to produce septicemia on their own account by a reversal of the process in an individual weakened by the primary disease. An organism, of definite morphologic and cultural characters, has been isolated by the authors from cases of influenza. It can be demonstrated in the blood, sputum and other exudates, and in the tissues, postmortem, by appropriate methods of staining. It belongs to the group of "filter passers," a group of organisms which pass through bacteriologic filters. It has been seen microscopically in the filtrate and has been cultivated therefrom. It has not been found in a large series of controls.

Bulletin de l'Académie de Médecine, Paris

May 13, 1919, **81**, No. 19

*Cesarean Section. Guéniot.—p. 632.
*Radium Treatment of Ear, Nose and Throat Tumors. Lannois, A. Sargnon and Moutet.—p. 638.
Normal and Pathologic Cytology of Submaxillary and Parotid Glands. De la Prade and Loiret.—p. 646.
*Gasserectomy for Neuralgia. J. Bourguet.—p. 648.
Hemostatic Apparatus of Uterus. H. Keiffer.—p. 650.

Cesarean Section.—Guéniot recalls his compilation in 1870 of the cases of cesarean section to date. He was able to find records of only 6 authentic successful cases during the eighteenth century, and not one successful case to that date in the nineteenth century among the 40 cases that had been published. Only one of the patients survived to the eighteenth day and then succumbed to tetanus. Bar has recently reported a series of 97 cases without a single mishap. Guéniot has not been so fortunate, as 4 of the 11 women died in his cases, but some of them were emergency operations. He lauds the advantages of planned cesarean section just before term, preparing the patient as for any laparotomy. He warns that we must not let labor surprise us, and advises to incise the fundus rather high, and drain into the vagina with a large stiff tube for five or six days, rinsing out the uterus at need. He warns further that with extraperitoneal methods of cesarean section if there is preexisting infection, or infection develops later, it is just as redoubtable here as if the peritoneum were infected, while the technic is more complicated. Hence he advises against any modification of the old and tried high technic.

Radium Treatment of Tumors in Ear, Nose and Throat.—Lannois and his co-workers compare the outcome in their 43 cases with others' experiences. They realized with the radium a clinical cure in 6 of 16 cases of malignant tumor of the tonsil; in nearly all of 6 cases of cancer of the nose; in 4 of the nasopharynx, and in 2 of 3 cases of ear cancer. The sarcoma cases were the ones most favorably influenced. Epitheliomas proved more persistent, and as cancer of the larynx is usually of this type, they have only 3 successful cases to report in their 14 cases in this group. The soft, ulcerating epitheliomas are the most refractory. Epitheliomas of the ectodermic type with *globe corné* are scarcely amenable to radium treatment; the results are often bad. Their method is to use as large a dose as possible, from 30 to 120 mg. of the radium bromid, and they left the tube in place at least twenty-four hours, sometimes thirty-six or even forty-eight hours. They aim to strike as hard as possible. If a second application is necessary, they postpone it as long as possible on account of danger of burns. One boy of 12 with a fibrosarcoma of the nasopharynx was given three exposures in two and a half months. Two months after the last application, after all traces of the tumor had disappeared, perforation of the hard palate occurred. This was the only grave complication in their experience, but in three cases of epithelioma of the tonsil the uvula dropped off. The radium burns are generally insignificant although they may sometimes entail gangrene, especially in the larynx, so that they found it best to reduce the dose for the larynx. They comment on the great advantage of using emanations, needles or intubation tubes coated with the emanations.

Gasserectomy for Trigeminal Neuralgia.—Bourguet has had patients whose trigeminal neuralgia returned after local injection of alcohol and the intense pain persisted in spite of systematic alcohol treatment. Gasserectomy was the last resource and cured them once for all. He advises access through a curved incision in the temporal bone. This exposes the maxillary nerves and these, like Ariadne's thread, lead directly to the gasserian ganglion. It is not necessary to resect the zygoma, etc.; he merely detaches the dura mater and severs the middle meningeal. When the gasserian ganglion is reached, he cuts the fibrous connections between the gasserian ganglion and the dura mater. Unless this is done, some of the ganglion is liable to be left. Neuroparalytic keratitis developed afterwards, but this is liable after any operation of the kind, even after Frazier's more complicated technic, and the keratitis yields promptly to treatment.

Bulletins de la Société Médicale des Hôpitaux, Paris

April 4, 1919, **43**, No. 13

*Lethargic Encephalitis. V. Audibert.—p. 296. A. Netter.—p. 300. P. Lereboullet and J. Hutinel.—p. 302.
*Hypothermic Influenzal Pneumonia. J. du Castel and M. Dufour.—p. 304.
*Endocarditis in Influenza. J. du Castel and M. Dufour.—p. 308.
*Valvular Disease and Dragging Apex Beat. J. Jomier.—p. 311.
*Case of Rabies. Lesieur, Lhermitte and P. Jacquet.—p. 313.
Serotherapy of Plague in Small Epidemic. Mouziols and Broca.—p. 320.
Cinnamic Acid Derivative in Experimental Tuberculosis. J. Jacobson, p. 322.
Syphilis as a Factor in Buccal Leukoplakia. G. Railliet.—p. 325.
Pulmonary Tuberculosis in Native Workmen from Asia and Africa. G. Delamare.—p. 329.
*Anthrax Bacillus Meningitis. Delater and Calmels.—p. 332.
Types of Prevalent Meningococci. Netter, Mozer and Salanier.—p. 334.

Lethargic Encephalitis.—Audibert's patient developed typical lethargic encephalitis at Marseilles, and the disease has been encountered in Algiers, Belgium and at Athens. Netter refers also to Morquio's three cases in children at Montevideo. One youth at Athens who finally recovered was left totally blind.

Hypothermic Influenzal Pneumonia.—The temperature kept between 35.6 and 36 C. (96.1 and 96.8 F.) and one of the men died.

Endocarditis During Influenza.—Du Castel and Dufour relate that after a few days of typical influenza, pneumonia developed, with latent endocarditis and a final phase of embolism, with death in about two weeks from the first symptoms.

Dragging Apex Beat.—Jomier noticed that the apex beat seemed to be protracted in 43 of the men examined, and in 30 in this group there were signs of valvular disease. In only 4 of the total 43 was the heart apparently normal. A dragging apex beat should always suggest valvular disease, especially when pronounced. The mitral valve was pathologic in 24 of the 30 valvular cases, the aortic valve in 6.

Rabies.—The girl of 14 whose case is described in detail by Lesieur, Lhermitte and Jacquet had the bulbar form of rabies, with especially pronounced distress, actual anguish. The latter preceded by several days the organic manifestations. They regard this sensation of anguish as a characteristic bulbar phenomenon. In some of the paroxysms of anguish it seemed to comprise the whole disease, as if it were to rabies what the muscular spasm is to tetanus. In this case the rabies developed nearly three months after the child had been bitten. She had been given systematic antirabies treatment, commencing fifty-three hours after the bite of the rabid dog. Netter reported a similar case in which the agitation, distress and periods of delirium had preceded by eleven days all the other symptoms of rabies. The boy of 11 had been bitten in the cheek two months before by a small dog with which he was playing and which later disappeared.

Anthrax Meningitis.—The anthrax had not been diagnosed during life as the pustule had not had time to develop its characteristic form. It was on the left cheek and the edema around was ascribed to phlebitis of the jugular vein. The young man, an American soldier, died the second day with symptoms of fulminating meningitis, and anthrax bacilli were found in the cerebrospinal fluid.

Paris Médical

May 10, 1919, **9**, No. 19

*Radium Treatment. C. Regaud.—p. 373.
*Chronic Pseudo-Appendicitis. R. Grégoire.—p. 379.
*Skin Complications of Exophthalmic Goiter. J. du Castel.—p. 382.
Case of Superficial Leishmaniosis in Albania. G. Heuyer and L. Cornet.—p. 385.

Treatment with Condensed Radium Emanations.—Regaud is director of the biology laboratory in the Radium Institute, and he here outlines what is known in regard to radium treatment and expatiates on the great clinical importance of tubes of condensed emanations and their numerous advantages.

Chronic Pseudo-Appendicitis.—Grégoire analyzes the lesions in or around the ileum, cecum and colon which may simulate chronic appendicitis. In some of the cases he describes the appendix had been removed and nephropexy done but the symptoms still persisted. Radioscopy usually shows the right colon much dilated, and that it is bound down and more or less kinked and obstructed. The fibrous bands responsible for this may be of inflammatory origin or congenital, and after freeing the bowel from its hampered condition the pains and constipation subside as a rule, but not invariably. Certain points are still obscure in these pseudo-appendicitis cases, as not every subject is absolutely cured by this surgery of the colon.

Skin Complications of Exophthalmic Goiter.—Du Castel passes in review the vasomotor, trophic, toxic and microbian complications which may develop with latent or manifest exophthalmic goiter. Certain eruptions, pyodermatitis or eczema may display a chronic or recurring tendency which finally is explained by development later of symptoms of exophthalmic goiter. The part played by the soil in these cases should be better appreciated.

May 17, 1919, **9**, No. 20

*Diagnosis of Amebiasis. C. Mathis.—p. 389.
*Peritoneal Reaction in Secondary Malaria. F. Trémolières and G. Leclerc.—p. 398.
Oscillations in the Blood Pressure. F. Lévy.—p. 399.

The Ameba in the Stools.—Mathis discusses the technic for the search for entamoebae and their differentiation from other parasites. Five illustrations show the parasites with which it is most liable to be confused.

Peritoneal Reaction in Malaria.—Trémolières and Leclerc describe the acute peritoneal reaction in the course of secondary malaria. In one case described the man of 36 developed symptoms simulating peritonitis from perforation of a viscus. The reaction was most pronounced in the liver region, and the liver was large and painful. There was nothing except the secondary malaria to explain this perihepatic reaction and warn against operative measures.

Presse Médicale, Paris

May 8, 1919, **27**, No. 26

*Gastric Cancer. H. Hartmann.—p. 245.
*Sign of Organic Radial Paralysis. J. Boisseau.—p. 247.
*Pathogenesis of Influenza. A. Orticoni, Barbié and Augé.—p. 247.
*Early Treatment of Syphilis. M. Pinard.—p. 249.
*Cure of Leg Ulcers and Edema. V. Audibert and Fouquet.—p. 250.

Cancer of the Stomach.—In his general review of this subject, Hartmann cites statistics showing the constantly increasing proportion of permanent cures after operations for gastric cancer. He has been able to trace 3 of his own patients cured for five years, 3 for six, 2 for seven and 1 for thirteen years, although he has lost track of the majority of his cases.

Differentiation of Organic Radial Paralysis.—Boisseau's illustrations show a characteristic inability to spread the fingers apart on a plane surface when there is organic radial paralysis. The first phalanx of the fingers curves and the thumb twists in abduction. With hysteric radial paralysis, either the patient is unable to make any spreading movement or it duplicates the action of the sound side.

Pathogenesis of Influenza.—Orticoni and his co-workers regard it as significant that there was an extensive epizootic among horses at the time of the epidemic of influenza last year. They isolated from the blood of some of the horses a bacillus which seemed to be identical with the bacillus they had isolated from the blood of some of their influenza patients, namely, an aerobic nonmotile coccobacillus, with long and short forms, and not growing on bouillon and gelose. They recall the severe epizootic in horses in 1889, and say that the present epidemic resembles it, only that the pulmonary complications were more severe in the epidemic of last year. In some of the neighboring villages all of the horses were coughing at the time the influenza was affecting the populace.

Abortive Treatment of Syphilis.—Pinard reports that in his experience as chief of the Centre dermato-syphiligraphique at Versailles, early treatment with mercury or neoarsphenamin did not always ward off the development of lesions in the skin and mucosa. They are infinitely rare, however, after arsphenamin treatment. Meningeal lesions are liable to develop after any treatment when it is not thorough enough. He warns against danger when mercury and an active arsenical treatment are given together. There does not seem to be any danger with the technic he advises, namely, six injections of a total of 2.30 gm. arsphenamin in not quite a month, beginning with 0.10 gm.; after three days, 0.20; after four days, 0.30, and then every seventh day, 0.50 or 0.60 gm. Absolute eradication of the disease seems to be possible, judging from some of his cases of ten years' standing, but this is based on empiric findings alone.

Treatment of Leg Ulcers.—Audibert and Fouquet comment on the ease and rapidity with which edema and chronic ulceration on the legs can be cured by a gently compressing medicated bandage. They wind the leg from the root of the toes upward with a stout roller bandage dipped in the creamy mass formed by mixing 10 gm. each of gelatin, zinc oxid and starch with 40 gm. each of glycerin and water and adding 100 gm. potassium silicate. The strips of stout gauze impregnated with this are softened in hot water when ready to use. The dressing is renewed every four days, and the patient is encouraged to walk and use the leg freely, as this breaks up the vicious circle from the stasis and defective nutrition of the parts from disuse of the limb. An illustration shows a ten year ulcer on the leg. It is shown again, completely healed, after six applications of the stiff dressing, in the course of thirty-one days. Healing is usually complete in from two to eight weeks, and the method has never failed yet. The use of the leg keeps up a continual massage of the veins and tissues, and expels the toxic serous fluids collected in them. Walking is therefore an indispensable element in the treatment. The ulcer heals in its own pus, the patient's attention is diverted from his ulcer by the return to his occupation or other work rendered possible by the free use of his legs, and his spirits go up when an early cure is promised him, which can be safely done. Immobilization is directly contraindicated.

May 12, 1919, **27**, No. 27

*The Masters of Physiology. C. Richet.—p. 257.
*Surgery to Remove Wrinkles. R. Passot.—p. 258.

The Masters of Physiology.—Richet's address on the pioneer research of Descartes and Lavoisier was delivered by request to the American medical students now studying at the Paris Faculté de Médecine.

Surgery to Correct Wrinkles.—Passot's illustrations show how it is possible to smooth out wrinkles by cutting out an ellipse of skin close to the edge of the hair. As the lips of the ellipse are sutured together, the slack in the skin causing the wrinkles is taken up, and the skin lies smooth. The wrinkles at the corner of the eye require two small ellipses, one close to the hair above, the other just below and in front of the lobule of the ear. Double chin can be corrected in the same way with a long "cravat" resection of skin in the neck below. The adipose tissue is removed, down to the aponeurosis, in resecting the ellipses. The ultimate outcome in some cases operated on by Pozzi, Martel and Morestin some years ago has been gratifying, and Passot has now a record of fourteen operations for this esthetic purpose. The effect is often rejuvenating to the spirit as well as to the outward appearance. Each case has to be studied by itself, taking up folds in the skin to see where traction is most effectual. When the best fold for the purpose is located, he holds it by gentle pressure from several forceps or clothespins, and marks around the base with a skin pencil, marking also with a compass the exact points for coaptation in suturing. The geometrical figure thus drawn on the skin is usually an ellipse 3 or 4 cm. long by 1.5 or 3 cm. wide, but it may be ovoid, the small end the upper one. The sutures are subjected to strain from laughing, yawning or even chewing, and to protect them he fastens a transparent shield with collodion in such a way that the traction comes on the shield more than on the suture. The subjacent skin is pushed up and the collodion applied low down so that the edge of the shield is fastened to the skin some little distance below the actual suture. The resection of an ellipse, in front of the lobule of the ear tends to smooth out wrinkles all over that side of the face, and is usually necessary whatever other ellipses may be resected. When the ellipse is cut too high, the outer angle of the eye is liable to be drawn out of place. The desire to conceal the scar in the hair has led to this disfigurement in cases he has seen operated on by others. The whole success depends on the care used in taking up the most effectual fold. If in time the skin sags into wrinkles anew, the correction can be repeated. He adds that the war has brought to the fore surgery of the face, and esthetic surgery should take the place it deserves.

May 15, 1919, **27**, No. 28

*Surgery of the Knee. J. L. Roux-Berger.—p. 265.
*The Cupping Glass Test in Eruptive Disease. D'Oelsnitz.—p. 268.
Reeducation of Vision in Treatment of Strabismus. A. Cantonnet.—p. 269.

Surgery of the Knee.—Roux-Berger refers to traumatic lesions of the knee, giving illustrations of the principal types and the special treatment each requires. In one of the cases described only opening up the joint wide disclosed the partial fracture of the cartilage and a loose scrap of cartilage. In less than four months after the arthrotomy, the young man was able to play football.

The Cupping Glass Test in Eruptive Diseases.—D'Oelsnitz uses a vacuum glass with rubber bulb as a form of revulsion which aids in the differential diagnosis of eruptive diseases. It is particularly instructive in measles, especially where troops are congregated. The measles or scarlatinal eruption is brought out plain by it in suspicious incipient cases. Even premature desquamation may be brought on. This test always gave negative findings with eruptions of alimentary origin, and, in his experience, always in rubeola. This test also reveals a hemorrhagic tendency before it has become apparent in other ways.

Progrès Médical, Paris

April 5, 1919, **34**, No. 14

*Arrhythmia of the Intestine: Enteroneuritis. M. Loeper.—p. 129.
*Chronic Ileus. M. Barbier.—p. 131.
Rudiments of Practical Dermatology. L. Bory.—p. 132.

April 12, 1919, **34**, No. 15

Cancerous Enteroneuritis. M. Loeper.—p. 139.
Rupture of Cavity in Lung: Emphysema. Chifoliau.—p. 140.
Influenza and its Treatment. J. Chalier.—p. 142.

Enteroneuritis.—A practically identical article by Loeper was summarized on page 1795.

Occlusion of the Intestine for Eleven Years.—Barbier's patient was a woman of 38 and for eleven years the feces had merely piled up in the colon, the mass of the "Fecaloma" filling almost the entire abdomen. And yet during the last year she had passed through an apparently normal pregnancy. The only mishap during the pregnancy was a menace of peritonitis three weeks before delivery. It was averted, however, by application of ice. Colic, vomiting and diarrhea ushered in the disturbances at the age of 23 and paroxysms of pain occurred regularly every ten or fifteen days, but the proposed operation was constantly refused, until the attacks became unbearable. The colon was sutured to the laparotomy incision and every morning for several weeks some of its contents were scooped out. By the end of the third week the colon could be drawn out and the segment with the stenosis was resected. There was no ulceration above but the wall of the intestine had grown very thick.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 3, 1919, **49**, No. 18

Principles of Disinfection. W. Silberschmidt.—p. 593.
*Medical Experiences in Asiatic Turkey. A. Vischer.—p. 601.
*Film Treatment of Wounds. J. de S. Palma.—p. 619.

Medical Impressions in Asiatic Turkey.—Vischer served for nine years as chief of the German Oriental Mission Hospital at Urfa in northern Mesopotamia. From 3,811 to 5,991 patients were cared for each year. Tuberculosis was prevalent and the pulmonary form seemed to run an exceptionally rapid course. Goiter was unknown at Urfa but he saw several cases at Diarbekir, about 150 km. to the northeast, on the Tigris. Appendicitis was also extremely rare, but hernia and bladder stone operations were comparatively numerous. The infant mortality was 46.6 per cent. among the children of 317 women investigated (1,863 infants). Typhus and scarlet fever were never seen, and only one case of diphtheria. Every one without exception seems to have typhoid, sooner or later. Venereal diseases are common but the nervous system seems to escape. No instance of tabes was encountered. In 1913 there was a severe epidemic of acute poliomyelitis.

Film Treatment of Wounds.—Palmas does not refer to paraffin films but to a tannin-gelatin-borax preparation which has been styled a "wound cement." He has been experimenting with various chemicals striving to promote local leukocytosis and phagocytosis while preserving the cement film action. Turpentine and calcium chlorid are among the chemicals which display this action even in minute amounts.

Gazzetta degli Ospedali e delle Cliniche, Milan

April 17, 1919, **40**, No. 31

Pneumothorax Complicating Influenza. G. Massaro.—p. 282.
*Treatment of Chronic Empyema. G. Onano.—p. 284.

Chronic Empyema.—Onano makes an incision, close to the sternum, over the rib and only as long as the rib is wide. The rib is then sawed with a Gigli saw. This is repeated with several of the ribs, leaving a space of intact skin between them. At the back, a paravertebral incision permits partial resection of the scapula. Then a compressing bandage is applied, after providing for drainage above and below, and the whole side of the chest sinks in enough to break up the vicious circle and start the healing process. The results have been most encouraging.

April 20, 1919, **40**, No. 32

*Wide Variability of the Same Infections in Different Individuals. U. Baccarani.—p. 289.

Variability of Same Infection in Different Persons.—Baccarani warns that in the prevailing zeal for bacteriology we overlook the importance of the biochemical condition of the

subject and the importance of the ambient as decisive factors in the disease. These latter determine the orientation and the clinical form of the disease and impress it with the individual stamp.

Policlinico, Rome

May 11, 1919, **26**, No. 19

*The Clinical Value of Occult Blood in the Stools. D. Maselli.—p. 577.
Silver Nitrate in Treatment of Mustard Gas Lesions. G. Amantea. —p. 590.
The Hemorrhagic Diathesis. Lino Urizio.—p. 592.

Occult Blood in the Stools.—Maselli remarks that to date we have no absolutely specific chemical test for blood in the urine. All the technics in vogue give a positive response with certain other substances besides blood. Microscopic examination of the stools will sometimes reveal substances to which the positive response might be credited. It is not safe to draw conclusions from positive findings unless different technics and repetitions of the tests give concordant responses. A negative response with the benzidin test, when strictly applied and to different parts of the stool, may be regarded as decisive as to the absence of blood from that particular stool.

Riforma Medica, Naples

April 26, 1919, **35**, No. 17

*Meningeal Reaction in Paratyphoid. E. Maragliano.—p. 334.
*Desiccated Antigens for Serodiagnosis. Micheli and Satta.—p. 337.
*Fourth Centenary of Leonardo da Vinci. A. Anile.—p. 339.
Normal and Deformed Feet. E. Aievoli.—p. 343.

Meningeal Reaction in Typhoid and Paratyphoid.—Maragliano warns to be very cautious in pronouncing the word meningitis in the course of typhoid and paratyphoid. A simple and comparatively harmless meningism may be responsible for symptoms which deceptively simulate true meningitis.

Desiccated Antigens for Serodiagnosis.—Micheli states that three years of experience with desiccated antigens has confirmed their reliability for diagnostic purposes. The bacteria are dried in a vacuum at room temperature, and a suspension of the dry cake thus obtained is made when ready for use. The biologic and biochemical properties of the antigens do not seem to be modified by this procedure. He has thus prepared antigens for the meningococcus, streptococcus and a long list of other infections, including dysentery and typhoid. These desiccated antigens keep indefinitely. The bacteria seem to maintain a latent vitality; it can be aroused by making an emulsion with bouillon and incubating for thirty-six or forty-eight hours. Typhoid and paratyphoid bacilli were thus roused to life anew after an interval of two years, and dysentery bacilli after five or six months.

The da Vinci Quadricentenary.—Leonardo da Vinci died May 2, 1519, and this quadricentenary has brought a new revision and appreciation of his scientific work. He is said to have written 120 books on anatomy alone, commencing at the age of 37. Most of these have been lost, but enough remains to show his indefatigable zeal in reproducing in drawings what he saw in the thirty cadavers he was able to secure at different times until the authorities definitely excluded him from the hospitals at the age of 61. Anile declares that the drawings are so perfect that even after four centuries of research on anatomy and physiology there is nothing to add to them, and in certain points they actually suggest whether our present conceptions may not be erroneous. His drawings are the more remarkable when we realize that they were done practically clandestinely, with poor illumination and no means of preserving the cadavers from rapid decomposition. In preparation for celebration of this anniversary in Italy an effort has been made to collect his scattered works, with photographic reproductions of others in the various libraries of Europe.

May 3, 1919, **35**, No. 18

Roentgen Localization of Foreign Bodies. G. Piccinino.—p. 354.
*Sterilization during Cesarean Section. S. Delle Chiaie.—p. 355.
Function of the Deciduous Teeth. C. D'Alise.—p. 360.

Sterilization During Cesarean Section.—Delle Chiaie decided that it was necessary to prevent further pregnancies in five of the fifteen cases in which he delivered the women by cesarean section. He accomplished the sterilization at the time of the cesarean section by cutting the tube at the cornu of the uterus and transplanting this end of the tube into a buttonhole made for it in the uterus wall, with care not to injure the round ligament or perforate the wall. The stump of the tube was held in place in this buttonhole with a few silk stitches, and the same procedure was repeated on the other side. The operation is thus an actual salpingo-uterus anastomosis, like Watkins' technic, only Delle Chiaie does not resect the tube as Watkins does. Mere ligation of the tube does not guarantee against conception later, as he found in one of his cases, and as others have reported. At a later cesarean section he saw that the catgut used for the two ligatures had evidently been absorbed too soon. The women treated with the salpingo-utero-anastomosis have shown no signs of conception during the two and three years since to date.

Brazil-Medico, Rio de Janeiro

April 19, 1919, **33**, No. 16

Anthrax Pustule on Wrist. F. Terra and E. Gomes.—p. 121.
Strongylus in the Zebú. Pereira Filho and C. F. Pinto.—p. 124.

April 26, 1919, **33**, No. 17

*Unilateral Parotitis and Panadenitis. D. Bastos.—p. 129.

Unilateral Parotitis and Panadenitis.—Bastos' patient was a man of 43 and the extensive phlegmonous affection of the right side required several incisions and treatment both for malaria and for syphilis before it yielded. The inability to swallow compelled surgical intervention after three days of the high fever and tumefaction.

Crónica Médica, Lima

April, 1919, **36**, No. 670

Spontaneous Tuberculous Pneumothorax. E. Odriozola.—p. 115.
*Characteristics of Pelvis in Peruvian Women. J. Romero.—p. 118.
*Tests for Blood in Urine. M. A. Velasquez.—p. 123.
History of Typhus in Peru. J. M. Chiriboga.—p. 127.
Pathologic Anatomy of Lymph Glands. O. Hercelles.—p. 133. Cont'n.
*Amebiasis of the Lung. L. B. Sánchez.—p. 138.

The Pelvis in Peruvian Women.—Romero states that the measurements of 1,115 women showed an average of 12.66 per cent. with abnormal pelvis although some in this group had apparently normal pregnancies and deliveries. The conjugata vera never measured less than 7.5 cm. He lists the various types of abnormal pelvis as encountered in the last four years.

Tests for Blood in the Urine.—Velasquez describes and compares different technics, expatiating on the simplicity and reliability of the Thevenon and Rolland method. He has applied it on an extensive scale, and found it extremely instructive for determination of blood in all the body fluids. Three reagents are required: (1) 2.50 gm. dimethylaminoantipyrina (pyramidon) in 50 c.c. of 90 per cent. alcohol; (2) 2 c.c. of glacial acetic acid in 2 c.c. distilled water, and (3) hydrogen dioxid (12 volumes). To 3 c.c. of the unfiltered urine are added 3 c.c. of solution 1 and 6 drops of the acetic acid solution, and the tube is agitated. Then, on addition of 3 drops of the hydrogen dioxid, in less than fifteen minutes the tint veers to a bright violet which only slowly disappears.

Pulmonary Amebiasis.—Sánchez diagnosed congestion of the base of the left lung from the hemoptysis and other symptoms presented by the wood-cutter, 48 years old. Under repose the fever subsided, but the blood streaked expectoration and the stethoscopic findings persisted unmodified or more pronounced. Cysts of the *Entamœba histolytica* were found in the sputum repeatedly, even after a course of emetin by the vein, but the general condition improved notably under this treatment. Sánchez thinks there can be no doubt that the amebas were directly responsible for the hemoptysis.

Medicina Ibera, Madrid

April 12, 1919, **7**, No. 75

Psychoneurosis from Trauma in Father. E. F. Sanz.—p. 17.
Radium Treatment of Tumors in Larynx. A. Ramos.—p. 20.
Pastes in Dermatology. Sicilia.—p. 21.

April 19, 1919, **7**, No. 76

*Artificial Joint for Ankylosis. E. F. Lozano.—p. 37.
Prophylaxis of Influenzal Pneumonia. S. L. Burton (Albuquerque). —p. 40.
Malarial Splenomegaly. F. Alberico.—p. 41.
Methylene Blue in Influenza. J. M. Bausá.—p. 45.

Artificial Joint to Correct Ankylosis.—Lozano has experimented on dogs with complete success interposing an artificial joint after resection of the natural joint. He makes it on the principle of a bone and socket joint. A solid sphere like the head of the femur, 10 mm. in diameter, with a stout pedicle, is mounted on a small plate with four branching arms. On a second similar plate is mounted a corresponding hollow sphere in which the first sphere fits smoothly but can be moved freely in every direction. The bones were resected in the ankle region and this artificial joint was implanted, the four arms on each half being bent back over the stump, and held in place with wire passing through tunnels hollowed out for the wire in each of the arms of the plates. The dog still limps a little, but in running and jumping the limp is scarcely perceptible, and the region of the new joint is not tender on pressure. The artificial joint is made of gold and platinum. The soft parts are scrupulously respected, and the interposed artificial joint answers its purpose perfectly. It fits on the horizontal bone stumps without the necessity for boring into the bone. The nature of the ankylosis generally requires resection such as fits the bones perfectly for this artificial joint. Several illustrations show the mechanical detail, and roentgenograms are given of the dog's leg.

Prensa Médica Argentina, Buenos Aires

April 20, 1919, **5**, No. 32

*Technic for Amputation of the Leg. A. A. Alsina.—p. 313.
*Serodiagnosis of Typhus. R. Kraus.—p. 317.
*Lean Diabetes. P. M. Barlaro.—p. 319.

Amputation of the Leg.—Alsina gives twenty illustrations to show the preferable technic for amputation at different heights. He advises to saw the fibula an inch higher than the tibia, and to provide a large posterior or antero-exterior flap.

Serodiagnosis of Typhus.—Kraus describes the application of the agglutination test with a strain of proteus during the recent public health expedition to foci of typhus in two remote provinces. An alcoholic preparation of the proteus was used, and he comments on the advantages of this durable preparation. Two agar slants of the proteus X 19 were emulsified with 2 c.c. of saline, and to this was added four times the volume of absolute alcohol and it was set aside for an hour, then centrifuged, the alcohol decanted, the sediment emulsified in an amount of saline equivalent to the alcohol, and 0.5 per cent. phenol was added. Control tests with other diseases were constantly negative, and only the tests with proteus obtained from Paris and Vienna were positive.

Lean Diabetes.—Barlaro illustrates the microscopic findings in a woman of 32 who had been in the hospital for a year with progressive lean diabetes. The pancreas seemed normal, except for the conspicuous absence of islands of Langerhans, and the ovaries also seemed normal except for absence of follicles. No other abnormalities in the endocrine system or elsewhere could be detected.

Revista Cubana de Obstetricia y Ginecología, Havana

February, 1919, **1**, No. 2

Case of Dorsal Trunk Presentation. J. Ramirez-Olivella.—p. 70.
Seventy Laparotomies. E. R. de Aragón.—p. 74.
Incarcerated Fibromas of Lower Uterus. M. C. Latatu.—p. 78.
Obstetrics from Social Standpoint. L. Huguet.—p. 84.

Revista Española de Medicina y Cirugía, Barcelona

April, 1919, **2**, No. 10

*Hydatid Cysts Opening into Biliary Passages. J. Blanc Fortacin.—p. 181.
*The Medulla Oblongata. J. Vilató.—p. 186. Cont'n.
Acute Pneumonia. A. Arteaga.—p. 192.

Hydatid Cyst Opening Into Biliary Passages.—Blanc Fortacin emphasizes that the clinical picture in these cases suggests infectious cholangitis with gallstones in the common bile duct only that the rapid course to an extremely intense maximum of the symptoms is not characteristic of gallstone mischief. Treatment must aim to clear out the bile duct as well as to evacuate the cyst. Attempts to drain the cyst into the gallbladder have proved disastrous, and this should be avoided. In his first case, the operation for evacuation of an abscess in the liver gave no relief although much pus and bile had been removed. Then an incision close to the costal arch released quantities of pus and bile, but still no opening could be found in the liver. To reach the upper portion of the much enlarged liver he resected part of the costal cartilage, and here found the large suppurating hydatid cyst. It had perforated into the bile duct and this in turn had ruptured, with a consequent circumscribed peritonitis.

The Medulla Oblongata.—Vilató recapitulates in detail the normal and pathologic anatomy and physiology of the medulla according to the present state of our knowledge.

Revista Médica de Bogotá

January-March, 1919, **37**, No. 438-440

*Persistence of the Gonococcus in the Urethra. V. Ribón.—p. 6.
*Fragility of Blood Corpuscles in Malaria. L. Netter.—p. 52.
*Relapsing Fever in Colombia. E. Robledo.—p. 66.
Criminology in Colombia. A. R. Blanco and A. C. Merlano.—p. 69.

Persistence of the Gonococcus in the Urethra.—Ribón warns of the danger of assuming that gonorrhea has been cured when the symptoms have subsided, as the gonococci may still lurk in the urethral glands and crevices. He describes how this can be detected and remedied by means of endoscopy, cauterization, copious permanganate irrigation, and massage with a stout catheter. He says that his remarks apply to both the male and female urethra.

Resistance of the Blood Corpuscles in Malaria.—Netter relates that in thirty-seven malaria patients the blood corpuscles displayed greater resisting powers during the malarial attacks than at other times. Quinin reenforces this augmented resistance and prolongs it temporarily. He queries whether it might not be possible to sustain and prolong this by other measures to combat hemolysis.

Spirochete Fever and Neo-Arsphenamin.—Robledo refers to relapsing fever as observed in Colombia, and emphasizes the prompt cure under neo-arsphenamin. He calls the parasite causing the disease the *Spirochaeta franci* as Prof. R. Franco was the first to diagnose the disease and identify the parasite in Colombia and also the arthropod, *Ornithodorus chinche*, which is the usual transmitter of the disease. In one of the two cases reported, the patient had recently returned from New York. Rapid recovery followed intravenous injection of 0.3 gm. of neo-arsphenamin, part of which was lost, so the dose was repeated the same afternoon. In a second case a single injection of 0.45 gm. sufficed. He uses only 1 or 2 c.c. of water for the vehicle, and says that he has always had *magníficos resultados* with this technic in a wide experience.

Revista Médica Cubana, Havana

January, 1919, **30**, No. 1

Vital Statistics for Havana, 1918. J. Le-Roy y Cassá.—p. 6.
Arsphenamin Treatment of Syphilis. N. G. de Rosas.—p. 15.
Film Treatment of Burns. L. Espin.—p. 23.

Semana Médica, Buenos Aires

April 10, 1919, **26**, No. 15

Improved Trocar-Cannula for Tracheotomy. R. Cabrera.—p. 355.
Proposed Requirements for Admission to Medical Course. U. Fernández.—p. 361.
*Bismuth Poisoning. R. F. Vaccarezza.—p. 366.
The Spirit of the Argentine Universities. W. Tello.—p. 371.
Teaching of Hygiene in Grade Schools. J. F. Montellano.—p. 374.

Bismuth Poisoning.—Vaccarezza published in 1916 two cases of bismuth poisoning and he now adds several more

to the list. The bismuth suspension had been taken for roentgen examination. One man of 55 died after ingestion of 100 gm. of bismuth in the course of twenty-four hours. It had been fractioned in four doses, and death occurred three hours after the first symptoms; they developed eight hours after the roentgen examination. An infant a few months old, with megacolon, died in the same way after the bismuth meal. He cites four similar fatal cases from the literature; two were in infants. The toxic disturbances may occur when the bismuth is given either by the mouth or the rectum, but in most of the cases the bismuth had been partly arrested at some point in the digestive tract. The bismuth then, under the action of the bacterial flora, yields nitrites and their rapid absorption entails the cyanosis, the hemoglobinemia and the collapse. The poisoning from external use and tardy internal poisoning are the result of the transformation into a soluble albuminate, the absorption of which is followed by mouth and kidney lesions. Evacuation of the poison, venesection, heart stimulants and oxygen by inhalation and subcutaneous injection are the main reliance in treatment of the acute form of poisoning. He declares that bismuth subnitrate should never be used for any purpose in the digestive tract.

Siglo Médico, Madrid

March 29, 1919, **66**, No. 3407

*Jacksonian Epilepsy Following Influenza. E. F. Sanz.—p. 249.
Influenza in Toledo District. C. Martín González.—p. 252.
Introduction to Study of Operative Surgery. J. G. Capdevila.—p. 256. Cont'n.

Postinfluenzal Jacksonian Epilepsy.—Sanz has already published cases of postinfluenzal aphasia, hemianopsia, and other nervous affections showing a focal lesion, evidently the work of the influenza poison. The frequency of these brain and meningeal complications and sequels seems to link influenza with the disease called lethargic encephalitis. In a case described a young man developed attacks of paresthesia in the left hand after influenza, with a tendency to abrupt contracture or tension of the muscles. At present this is only subjective, after a period of pronounced motor spasms. It seems to be a partial sensory epilepsy. Sanz has also encountered cases of hysteric monoplegia consecutive to influenza, and cites one published recently by Vivanco.

April 5, 1919, **66**, No. 3408

The Work of the Heart and the Eight Hour Working Day. J. G. Ocaña.—p. 269.
The Forensic Necropsy. Jesús Canseco.—p. 270.
*Influenza and Typhus at Berlin. A. Ferratges.—p. 272.
Pretuberculosis. B. Gil y Ortega.—p. 275. Conc'n.

Influenza and Typhus in Germany.—Ferratges is the military delegate from Spain at the embassy at Berlin and this is his official report on influenza and typhus there. It is dated March 10, 1919, and states that the experience in Germany has confirmed the experiences elsewhere in this and previous epidemics of influenza in regard to the inability to check the spread of the disease on account of the impossibility of isolating the mild cases, the enormous diffusibility of the germ, and the appearance of thousands of cases at once. No attempt was made to close schools or theaters, etc., and declaration was not compulsory. The strict measures in this line that had been taken in some cantons of Switzerland had not seemed to check the spread of the epidemic, and Germany therefore refrained from anything of the kind. The bacteriologic findings differed widely and also the treatment. Köhler reported that he had found hot baths very useful, at 40 or 42 C. (104-107 F.). No mishaps were ever noted although the pulse usually rose and slight transient palpitations sometimes followed. Ferratges reported further that although there are twenty-four "lousoleums" in Berlin, to delouse the soldiers, yet typhus had got quite a foothold. In the two last two weeks in January there were 144 cases with 11 deaths and 502 cases with 28 deaths, but in the last week there had been only 18 cases reported, with 3 deaths.

Gann, Tokyo

March, 1919, **13**, No. 1

*Inoculation of Fowl Embryos with Human Cancer Tissue. K. Kiyono, Y. Sueyasu and H. Tsujt.—p. 1.
Primary Cancer of the Appendix. K. Suzuki.—p. 4.

Inoculation of Fowl Embryos with Human Cancer.—Kiyono, Sueyasu and Tsuji give an English summary of their long and illustrated report in Japanese of their inoculation of chicken, duck and geese embryos with human cancer cells. The cells from 64 cancer cases developed tumors in 12 of the embryos but in 3 of the cases the growth was not very pronounced. The 21 sarcoma implants gave 5 positive and 2 weakly positive responses; the 33 carcinoma implants 2 positive and one weakly positive; the 4 fibroma implants gave one positive result, and the one perithelioma elicited a weakly positive result. The outcome, the location of the human tumors and other details are shown in a table. When the tumor implants took root and grew, this occurred very slowly. The character of the tumor cells changed very little in some of the cases and in the others not at all.

Mededeelingen v. d. Burg. Geneesk. Dienst, Batavia

1919, No. 4. Parallel Dutch-English Edition

Pathologic Anatomy of Tuberculosis in the Dutch Indies. A. E. Sitsen.—p. 1.
*Folklore about Tuberculosis in the Netherlands Indies. C. D. De Langen.—p. 25.

Folklore about Tuberculosis in the Netherlands Indies.—De Langen sent a questionnaire to native physicians and health officers throughout the islands and to other persons whose occupation brings them in touch with sick natives. The replies emphasize that pulmonary tuberculosis is not encountered in children. It is supposed to be hereditary, and much interesting folklore is connected with it. A number of native remedies are described, and de Langen comments on the fact that so many of the formulas contain lime. In the mosques the water used to rinse the mouth for the prescribed ablutions is spit back into the basin and used over and over again in this way on Fridays when hundreds and hundreds visit the mosques.

Hospitalstidende, Copenhagen

April 23, 1919, **62**, No. 17

*Meningococcus Meningitis. O. Thomsen and F. Wulff.—p. 513. Con'd in No. 15, p. 449.
*Examination and Treatment of Dangerous Bacilli Carriers. O. Thomsen and F. Wulff.—p. 519.
*Simplified Retention Catheter. H. Bisgaard.—p. 523.
*Pyelography and Pyeloplastics. J. Nordentoft.—p. 529. Conc'n.

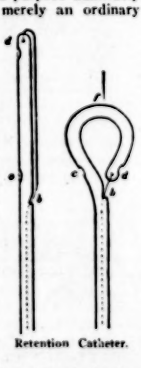
Meningococcus Meningitis.—Thomsen and Wulff comment on the recent Copenhagen epidemics of meningitis that they seem to prove that the close contact in military barracks is responsible for an exaltation of the virulence of the meningococcus. No other assumption will explain the fact that of the 500 new recruits from all parts of the country, taken on the training ship "Fyen" March 26, 1917, ten developed within a week the most malignant form of petechial meningitis without contact with cases of meningitis. A chart is given showing the distribution of the 79 military and 114 civilian cases of meningitis during the two years in that district. The malignant petechial form occurred in 59 of the military and in 58 civilians, but in the civilian cases contact with the military could almost invariably be demonstrated. Under no other conditions is there such close living together of large numbers as in military barracks and possibly in mines, and we can assume that a certain number of the men are meningococcus carriers. Others get the meningococci from them, and in some a meningococcus cararrhal affection develops. The cocci in adapting themselves to this condition become more and more virulent by repeated, rapid transmission until they are able to induce the petechial type of the disease. This gets transmitted to civilians, but the meningococci in civilian conditions rapidly lose their virulence until finally they become

so slightly virulent that they are harmless for all except the least resistant, weekly infants in particular.

Thomsen and Wulff thus reject the idea of a special strain of meningococci as being responsible for the petechial type of meningitis. They argue that the virulence is not a constant property, but waxes and wanes. The meningococci linger usually long in the nasopharynx of convalescents from petechial meningitis, rebellious to all measures. In conclusion they say that the differential diagnosis in fulminating meningitis is often difficult; even cultivation from the blood may fail, and is almost sure to fail when not done until after death. But there is one finding that distinguishes meningococcus sepsis from other forms of sepsis, namely, the great accumulation of gram-negative cocci in the endothelial cells of the vessels in the skin of a petechial lesion. The cocci are found also in the lumen of these vessels. The skin should be examined for this as soon as possible after death, and fixation should be done with a weak solution of formaldehyd.

Treatment of Dangerous Carriers.—Thomsen and Wulff give an illustration of the arrangement at the State Serum Institute both for obtaining smears from the throat and for treating the throat of diphtheria, scarlet fever and other dangerous germ carriers. The aim is not only to protect the physician against infection from the subject's coughing, etc., but also to prevent accumulation of germs in the room. Two holes for the physician's arms are cut in a plate glass screen which is fitted into a window on the ground floor. The subject sits on a seat outside, in the open air, and the physician stands inside the room. A glass slide covers each hole when not in use; raising one closes the other, and both close automatically as the arms are withdrawn, so the carrier cannot talk through the holes. The screen does not prevent conversation. The spatula, etc., used on the subject are dropped into a pail on the ground outside before the arms are drawn in. A light is arranged above the window to throw a bright light into the throat. The illustrations show the carrier in cap and overcoat seated on the chair outside the windew, his head held at the proper distance and position by an attendant standing behind.

Improved Retention Catheter.—Bisgaard comments on the drawbacks of ordinary retention catheters, and commends a device of his own which has answered its purpose admirably in several years of experience. It is merely an ordinary Nélaton catheter flexible enough to have the last fourth of its length bent to form a ring. He cuts a small opening, *b*, between the third and last fourth, sloping the top of the opening but keeping the lower edge perpendicular to the axis of the catheter, as it is thus stronger. Another opening, *c*, is cut on the opposite side, that is, on the same side as the original opening at the tip of the catheter but closer to the opening *b*, allowing about 2 cm. between them. With a needle, a silk, aluminum bronze or other smooth thread is then passed into the catheter and out through the extreme tip, a knot in the thread holding it firm at the tip. The threaded needle is then passed into the opening *b* and drawn out at the end of the catheter below. It is introduced like any catheter, but when the thread is pulled and fastened, the outer fourth bends into a circle, this circle holding the catheter firmly in place in the bladder. By unwinding the thread from the outer end of the catheter, the tip straightens out, and it can be withdrawn like an ordinary catheter. A knot near the outer end of the thread appears in sight when the ring is complete, and the end of the thread is then wound around the projecting end of the catheter. A small metal cylinder inside the catheter to strengthen it at its weakest point, namely, the opening *b* where the thread passes out and returns to the catheter, might prove useful but is not necessary for moderate use. Even at the worst, if the ring should become incrusted and break off, it could be withdrawn by pulling on the thread, as the sides of the ring would be squeezed together as it enters the urethra.



Retention Catheter.

Pyelography.—Nordentoft reviews at great length the advantages and disadvantages of pyelography and pyeloplastics, as encountered in his clinical experience and recorded in the literature. His final conclusion is that nothing is so instructive as pyelography in certain cases, especially with hydronephrosis, but that it should be used only with reserve and extreme caution. It is to be hoped, he says, that it may be possible yet to find some harmless contrast substance, and he warns that the procedure should never be applied to both kidneys at once.

Ugeskrift for Læger, Copenhagen

May 1, 1919, **81**, No. 18

*Pseudohermaphroditea. K. Lehmann.—p. 751.
*Adjustable Capillary Pipet. P. Bogason.—p. 757.

Hereditary Pseudohermaphroditism.—Lehmann investigated conditions in the family of a female pseudohermaphrodite infant that had died from cachexia. A cousin of the mother was a male pseudohermaphrodite, and one of the infant's brothers had presented hypospadias and cryptorchidism, and it had also succumbed to cachexia at about the fifth week of life. Similar investigation of the familial antecedents in a case of pseudohermaphroditism recently published by Fibiger revealed likewise malformation of the external genitals in three of the other six children. Two normal girls are living, but the boys all died in infancy. In both families all the children seemed to be strong and well developed at birth, except for the genital anomalies, but the children with the latter all wasted away and died in a few weeks without known cause. There was no enteritis. The early mortality is a striking feature of these cases; in Neugebauer's compilation of 1,250 cases of pseudohermaphroditism, 61 were less than a month old and 50 per cent. of these had died, as also 33 per cent. of the 93 other children under 10 years of age. The complete atrophy of the thymus in the infants whose cases are reported in detail suggests that the abnormal condition of the external genitals is accompanied by abnormal conditions in the endocrine system. This would explain the high and early mortality in such children. It suggests also that treatment with thymus might tide the children past the dangerous point or years. Corby reported the case of a pseudohermaphrodite of 15, a cretin, with polydactylia, and another child (dead) was also a pseudohermaphrodite. The parents were cousins, and most of their twelve children had died early. Lehmann discusses the application of the mendelian laws in these cases.

Improved Pipet.—The middle of the rubber bulb on the capillary pipet is squeezed flat with a small metal device. By turning the thumb-screw in this, the lumen of the bulb is opened, and it is possible by this means to aspirate a fluid into the pipet precisely to the desired mark, instead of the usual haphazard methods.

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*Uric Acid in Urine in Health. A. Faber and E. Gottlieb.—p. 787.

Uric Acid in the Urine in Health.—Faber and Gottlieb have been conducting research to determine the indications for restriction to a milk-vegetable diet with joint disease or metabolic disturbances of any kind. One way to determine this is to give purins in a test meal and examine the output in the urine. The previous experiments in this line to date have not been conclusive as they were made on patients with various diseases. The research here described was with twelve normal persons, and the tables given show thus the normal standard for comparison. Their diet was mixed, but with only 0.02 to 0.09 gm. nitrogen daily. The test meal consisted of 200 gm. sweetbreads, and the output of uric acid in the urine for three days afterward is charted for the different cases. The findings showed a proportional relation between the individual's weight and the capacity for eliminating uric acid, the two standing in inverse proportion, the larger the weight the less the output. Before the test meal, the output of uric acid varied in the different subjects from day to day by 3 to 37 per cent.